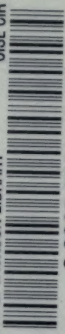


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NATURE STUDY  
AT THE CAMP SCHOOL FOR BOYS

Educational  
Teach  
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A

# DAY CONTINUATION SCHOOL AT WORK

PAPERS BY  
TWELVE CONTRIBUTORS

EDITED BY

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AND

R. W. FERGUSON, B.Sc., A.R.C.S.

WITH ILLUSTRATIONS

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16.3.21.

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LONGMANS, GREEN, AND CO.  
39 PATERNOSTER ROW, LONDON  
FOURTH AVENUE & 30TH STREET, NEW YORK  
BOMBAY, CALCUTTA, AND MADRAS

1920





## EXPLANATORY NOTE

THE scope of this book is fairly indicated by the title. It deals with a Day Continuation School—or, more correctly, two such schools—actually at work. No attempt is made to cover the whole question of Continued Education. For instance, rural schools and their peculiar difficulties are not included at all.

Nor has uniformity of style or treatment been aimed at by the several contributors. On the contrary, there will be found much divergence of view, some overlapping, and even occasional contradictions. The main point is that each contribution is the outcome of personal experience in some aspect of the work.

The various sections which follow were written at different times during 1918 and 1919—some during the War, others after the Armistice, some before and some after the passing of the 1918 Education Act. Of even more consequence, perhaps, is the fact that the period of compilation coincided with a time of considerable development in the actual schools around which the book mainly centres. Having worked for some years on the basis of one compulsory and one voluntary half-day per week for all students under eighteen, these schools were re-arranged in September 1919, so that each student under sixteen attended for two half-days, while the arrangement of a compulsory half-day and a voluntary one was retained for those over sixteen. In this way the spirit of the 1918 Act is fully complied with, while its provisions for the older students are exceeded in various ways.

## EXPLANATORY NOTE

Finality is difficult to reach in a rapidly developing experimental scheme, and any attempt to bring all chapters of the book quite up to date would have involved repeated re-writing and almost indefinite delay in publication.

This note may explain some apparent discrepancies in respect of time given to study and other details.

The twelve contributors to this volume hope that, with all its limitations, the book may prove of some interest to 'the large and happily increasing number of people studying the problems connected with Continuation Schools.'

W. J. W.

R. W. F.

*Bournville, 1920.*

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# GENERAL INTRODUCTION





# GENERAL INTRODUCTION

- I. ADOLESCENCE AND THE TEACHER.
- II. BRIDGING THE GAP.
- III. THE DAY CONTINUATION SCHOOL AND A NATIONAL SYSTEM.

BY W. J. WRAY, M.A.

‘**B**OOKS on education are usually written by people who have failed in the profession.’ So ran the old jibe. This series of essays has been written by men and women all actually engaged in this pioneer Continuation Day School in some way or other. No claims are made, but experiences and conclusions, where possible, are set forth, and occasionally attempts made to point out the likely and fruitful paths of development as well as probable pitfalls.

Obviously in such a series of papers there will be apparent diversity of opinion. This the editors have not attempted to co-ordinate. It seemed best to them to let the writers see the problem through their own eyes rather than seek for uniformity of opinion. With the new types of schools still in a fluid condition there will be much need for individual experiment. Further, it is not a description of the whole movement, so that the special needs of rural and farming areas are not discussed.

Probably one general conclusion will be reached, namely, that the main purpose of these continuation schools should be to continue the general education by the opening up of the faculties and the widening of the minds of the pupils. This must be sought by any and every legitimate means. If these

## GENERAL INTRODUCTION

ends are steadily kept in view vocationalism can be trusted to attain its true efficiency. Citizenship and life values must be the first aim. Efficient workers uninstructed in ethical values and ignorant of wide civic responsibilities cannot take on the many-sided task of reconstruction in this new democratic world. Let the Day Continuation School movement be full of vision so that its raw material may be worthy to become the instrument of unselfish clear-eyed citizenship. To mould such citizens is a task worthy of a great profession, filled with a sense of vocation in its own august calling.

It is well too for any who read this set of papers to realise that this school was inaugurated about ten months before the War broke out, and consequently was faced almost straightway, not only with its own initial difficulties, but with the sense of strain and unrest which the War laid on all the youth of the nation.

The buildings employed were by no means suitable. In the case both of the boys and the girls they were public institutes used in general for meetings and various other purposes, but turned into schools during the day. Happily each had a good-sized hall attached for 'gym' work and physical exercises. By the co-operation of Messrs. Cadbury Bros. and the Birmingham Education Committee new buildings worthy of the work are shortly to be put in hand, and the experience gained will guarantee the buildings suiting the work to be attempted. The firms engaged also had been in the position before the War of being able to select their young employees with particular care, since they had been expected to pass a test in medical fitness as well as in general proficiency. But the munition works offering such tempting baits in the way of high wages, the firms in question had for the time slightly to lower their standards in taking on their young beginners. This only adds to the value of the experiment as dealing with normal types going into works and offices, rather than with a selected set.

It should also be remembered that *all* grades of employees are included—semi-skilled and unskilled routine workers as well as those engaged on work which calls for special skill or

## ADOLESCENCE AND THE TEACHER

training. Some other experiments in continued education have this fundamental distinction that their operations only extend to, say, apprentices or office employees, or a combination of those two classes.

Probably the greatest drawback in starting such a venture in war time was due to the general unrest added to the fact that no other firms in the district were expecting their young employees to continue schooling, hence some feelings of irritation and antagonism which were often manifested in the earlier days, and which were only overcome by the exercise of patience and tact.

But the writers, after having carried on through the difficult pioneer period, aggravated by the additional drawbacks of the War, are filled with great hopes as to the place which the Continuation School will play in moulding the youth of the nation in the coming days.

### I. ADOLESCENCE AND THE TEACHER.

The War has brought in its train much national heart-searching, much national stocktaking. Naturally the education which our youth receives has come under review, although perhaps in this connection it would be truer to say that the education our youth does not receive is being perceived. In pre-war days through school meals and school clinics attempts were being made to obtain greater value for the money spent on our council schools, on our underpaid teachers, on what was seriously spoken of as our national system of education. By greater freedom in the schools, by a closer medical inspection, more by-products were being recovered.

But at fourteen years old the active responsibility of the nation for the child was cast off so far as education was concerned. The State had given him warmth and much fact pabulum during some nine years for five-and-a-half hours daily. It had kept him reasonably clean. It had put him under repressive conditions which had prepared him for the atmosphere of the industrial world, and turned him loose on



## GENERAL INTRODUCTION

offices to appal the business men by his spelling disabilities, his inaccuracies, his half-baked mental condition.

But what else could be expected from the general indifference of the public ! The first essential to consider was the keeping down of the rates, not the culture of the future citizen. So we had large classes, overworked and under-paid teachers, rigidity where there should have been freedom and outlet for the playfulness of youth. With this stiff codified system of education it was perhaps as well that the boy and girl did leave school at the age of fourteen. Repressed in soul and often stifled with facts, a depressing atmosphere working on mental indigestion gave them no love for their school.

We have heroics and emotions enough over the great schools, glorious memories and magnificent traditions, but whoever went into heroics over our council schools ? What glorious memories do they call up in the minds of their former pupils ? The marvel is that the tone is maintained so high, the sense of good fellowship kept so cordial. Surely this is due to the honourable efforts of that great but secretly despised profession of teachers. With no encouragement from the public, much suspicion from the Education Authorities, and a scarcely concealed attitude of contempt on the part of higher academic institutions, the elementary school teachers have maintained the tone of their profession magnificently. They have largely moulded the boys who astonished the world at Mons, at Ypres, at Cambrai, the boys upon whom the task of holding off the powerful prepared enemy has mainly devolved.

Yet what might have been done in pre-war days and may be done in post-war days by a fuller, more natural system of education. Smaller classes, less rigidity, less cramming, better feeding, all mean truer education with better results ; more gladness and enjoyment by the child, finer citizenship for the nation.

Elementary Education, as at present organised, hardly knows what to do with the boy or girl who has passed its Standard VII. Harassed, overworked teachers, with their



## ADOLESCENCE AND THE TEACHER

large classes, cannot give the attention they would to the newly developing life of puberty, the strange new emotional creature who stands at the door of adolescence.

For the age we elect as the finishing period, round about fourteen years, Nature chooses as a new starting point. Our 'national' system of education might be devoid of any knowledge of psychology and physiology when it sets up this critical age at which to fling its youth out upon the world.

Psychologically it is bad in various ways. Nature is calling here for a period of suspense. The emotions are developing much more quickly than pure mentality. Emotional storms are almost the keynote of the next year or two. At the same time there is proceeding much sexual development, wide spiritual searchings. But concomitantly into education there now comes an individuality, questioning, relating, searching. No longer are facts absorbed impersonally, nor impressions received by uncritical material. There is a self—inquisitive, acquisitive—projected alongside this world of fact, phenomena, and mystery. A new creature is being born, partly from physiological, partly from psychical urges, and hence educational possibilities are increased a thousandfold.

When we can arrive at a method of education which unites the demands of the inner development and the outer environment we shall have reached a happy *via media*. But this means less and less a 'national' system of education. It connotes freedom, breadth, humaneness, lack of officialism, a decreasing respect for abstract education, and an increasing sympathy with body and soul nurture. It involves a deep respect for the teacher, a corresponding reverence for the child. Such a method will mean no longer basing education upon a theory of fact stuffing, but an education founded upon spiritual values expressing themselves amid the external forces of life.

The hour is pregnant with high possibilities for the nation. On every hand there is an uprush of new life. The War acted as the clearing-house of ideas, it revealed the quick-set hedge which, so far, has separated nations. They exchanged their literature, their scientific discoveries, their

## GENERAL INTRODUCTION

philosophic theories. But their upsurging human fellowships, the human aspirations of the individual, were hardly perceived. Now the community of humanity—the wistful, half-dumb crowd—is becoming self-vocal. Militarism can repress, strife delay, but every year these aspirations for liberty, for fulness of life, become more clearly sounded on all hands. Each step achieved in the upward climb of man becomes a platform from which a wider horizon is revealed, a stairhead from which higher summits shall be scaled. But the base of all reform, the foundation of all real progress, is found in the mind of man—the sovereign artisan of the new creation.

Hence the import of the hour with all its mighty possibilities. For the ‘open sesame’ to the future is education. It is the key industry on which depends all industrial expansion. It is the living force around which all life values can be rightly organised. To get right ideals here is to settle the true currents of national and imperial well-being.

But this depends not upon ‘My Lords’ at Whitehall, but upon all who have the true civic culture at heart. Not alone upon Education Committees, nor officials, nor inspectors, nor even teachers, but upon that elusive person—the man in the street—the new unexplored woman force—upon these at last will depend the yea and nay of the lines of educational advance.

What is done therefore in this connection must be done quickly, and by far the most urgent matter in our national life is the future of our national education. In this connection we need the widest possible vision to interpret the word aright.

But the key to the situation as at present revealed lies in the so-called teacher problem. We are calling for expansion on various new lines. We are looking for better results under established conditions; labour, now all powerful, is calling for secondary school training for all children whose parents so desire. Here straightway we need a completely new outlook. Teaching, the task of guiding the minds of the future citizens of the nation during childhood, is surely as worthy and at least as important as the profession of medicine, law, or the church, yet the social standing given to those who carry on at our council or our national schools is of a half-contemptuous

## ADOLESCENCE AND THE TEACHER

character, something between the working man and the professional man. This is one indication of the ingrained snobbery of the nation and is found in most ranks of life. Is not this in itself the greatest reflection upon a system of education which is not based upon citizenship and service but upon the fallacious test of wealth or social standing? If we shut down our *ad hoc* teacher training college and sent every prospective teacher through the ordinary university course, plus the special extra training needed, they would obtain a wider vision, a larger comradeship, and might be largely delivered from the besetting perils of professional training!

Further, the financial attitude must be completely altered.<sup>1</sup> The work is taxing and nerve racking in a way that neither the devotees of medicine, law, nor the church can understand. It has few opportunities for self-expression such as all these other professions allow. There is for an 'assistant' little possibility of originality. The work is filled with routine. It has many of the vices of the factory system, plus the strain of so-called 'keeping order.'

It may be that a wholly new system of organisation inside the school can be arrived at, especially for the new types of educational institutions contemplated in day continuation work.

The elementary schools were originally organised, unconsciously, upon the old industrial and factory system, master and journeymen, with apprentices (i.e. pupil-teachers), foreman and workmen. The head master and assistant master, head mistress and assistant mistress system is not necessarily the best for such work as education. All the teachers on a staff as a rule have received practically similar training. They are usually clear-headed, intelligent people. It would be wiser and more dignified to call them all into council on the questions of organisation, tone and school welfare. Let the head master or head mistress be rather in the position, in effect, of Chairman of Committee. The responsibility would ultimately rest with the 'Chief,' but it would give

<sup>1</sup> Since these words were written the financial position has happily improved.



## GENERAL INTRODUCTION

the individuals of the staff more opportunity for self-realisation, as well as make for more flexibility and originality in the general work and spirit of the self-contained school.

The question of remuneration, further, is symptomatic. Teaching is largely passing into the hands of women. When they first took up the profession it was about the only one open to women apart from the world of pure industry. To-day teaching is one of various professions open to them. Girls are looking, perhaps, with an even more scrutinising glance than boys as to the work they will take up. Typewriting and shorthand schools are multiplying enormously, offering 'potted' educational training and speedy remunerative opportunities. No more harassment of examinations in such work; a clearly ordered routine of work and wage; less officialdom in supervision. There is not the same nerve strain as is involved in having to lead or control a number of children, hence the class of girl from whom the recruits for teaching were mainly drawn is turning to other callings involving less grind.

The girls of outstanding ability are passing to medicine, dentistry, and other more recently arrived professions; the average tend to the easier, less nerve-racking secretarial type of post. All this points to an urgent need of change in the attitude manifested, both socially and remuneratively, toward that most responsible body of men and women engaged in drawing out the minds of the children of the nation.

If the supply of teachers was running short before the War under normal competitive occupational pressure, it must fill every earnest citizen with dismay to contemplate how any further development of education must be delayed owing to the lack of effective human instruments.

If there is to be, as generally predicted, an enormous expansion of trade following the War, it becomes even more probable that the keen-minded boy and girl, through a fuller occupational opportunity, will gravitate to the world of industry rather than to the profession of teaching. The latter is a vocation in the highest sense, but the devotees of a vocation remain normal human types in their bodily and



## BRIDGING THE GAP

spiritual needs, and on the basis of a high mentality and extended culture they have often a wider range of appetites and cravings than the average member of society.

All this points with urgency to the need of a change in the general public attitude on the questions of teacher, remuneration and status. Of course under the war pressure and by means of the 'Fisher' Grant there has been a distinct improvement, but the attitude needed is not simply that of throwing a grudging sop to Cerberus, but a whole change of attitude in the mind of the public towards this highly important work. Otherwise we shall be building up fine systems on paper without proper people capable of working them, and spending money on extravagant buildings whilst penalising the human material.

The last thing education dare do is to follow in the wake of industry and be mechanised. Scientific management may make for greater productivity in commerce by systematising and unifying process and matter, but the watchword of educational progress must be freedom.

For each child, as each teacher, there must be the widest opportunity for development of the best self. Over-organisation and rigidity are the greatest foes of originality and the expanding life.

If the Continuation School is to be truly successful the pivotal point will remain the personality of the teacher. It is essential, therefore, that all should be done to draw the best type of man and woman into this side of the profession.

## II. BRIDGING THE GAP.

The critical moment for the school and potential scholar is the first week at the new type of school. The pupil has already had many years of a national education system. He has accepted it in unquestioning fashion. So far he has been pretty plastic material. If he has had dim stirrings of an inner life there has been little to nurse them into a rich emotionalism, and the element of novelty has done little to create such movements in school life.

## GENERAL INTRODUCTION

But suddenly a great change comes in routine and status generally. The girl and the boy become wage earners. They begin to follow a new course of life. There is a wide expansion of the personality. There is an indefinable change even in the home treatment, for the wage earner has to be considered. There is also the first recognition of beginning to be 'grown-up.' More pocket money creates greater range of desire. The self-regarding instincts may be indulged along wider lines.

Formerly associating mainly with boys and girls of similar ages, the pupil now begins to mix up during the working day with men and women of all ages. A new education is begun, unconscious in character but in its various appeals freely assimilated. There is a sudden amazing expansion of mentality due to new ways of life and new processes being absorbed.

This self-regarding expansiveness is ministered to by the totally new plane of life. The tone of the normal factory or office among the workers is friendly, 'free and easy.' The boy or girl is accepted into the camaraderie and drops into it, doing many little services but generally receiving free recognition.

The initiation of the adolescent is no longer into the ritual of a tribe but into the atmosphere of a modern industrial system. And from this initiation there follows a tremendous development. It is almost a commonplace that the factory has done for the working class what the public school has done for the wealthy class, taught esprit de corps and given a definite current to life in general.

Consequently it is against the background of the new industrial environment and the newly developing powers of the pupil that the continuation school has to take its place.

And so far the normal boy or girl has not taken kindly to this further State imposition. In the school of which this set of papers professes to represent the general tone and condition, the pupil has not only accepted increased education with suspicion but with positive dislike. This was more marked in the very early days of the school. It seemed an unnecessary continuation in the leading strings of little child-

## BRIDGING THE GAP

hood days. Other boys or girls did not have to continue at school, and it seemed somewhat of a degradation to those who did.

Then the fact that there must be a sort of a jolt because the boys and girls were being asked to 'think' when during the rest of the week they were 'doing' was resented. For five days workers, members of a great industrial society, then for half a day in a state of tutelage, they felt they lost caste and their self-regarding sentiments were equally lowered. Consequently they inwardly rebelled. How could they associate on terms of equality with fellow-workers when they were plainly still only school children? They could not 'spread' themselves as they would, for they suffered this distinct lowering of status once weekly as against the rest of the shop. Then, further, their professional pride suffered. The shop could not turn out so much if they were missing. The output must suffer.

This is something of the sort of outlook with which the boy worker formerly approached the Day Continuation School. Everything depends then on his contact with the actual thing. Did he find himself in a loose, noisy set of anything from fifteen to twenty-four similar youths he soon caught the atmosphere; exercises were scamped, slurred over, or calmly ignored. You can force a boy to a continuation school but you cannot make him work.

If the new comer found himself in a set of indolent but quiet boys it was almost worse. He settled down into a waking sleep for all work except 'gym,' and naturally there was a temptation for any master or mistress with such an indolent but not noisy set to let sleeping dogs lie and just get what work was possible. Or perhaps the lad had been of a good type at school, keen and able, on friendly terms with the master, easily on top of his work. Now he finds himself with a crowd of boys who are of a comparatively poor type, and there is nothing to call out a competitive spirit. He could do better work than the average of his present set two years past. Will he act as a lever upwards or the class pull him to its level—which?



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Much obviously depends upon the personality of the teacher under these somewhat trying and complex circumstances. If he has come from secondary school work he may be appalled at the boys from various standpoints, the untidiness of some, the distinct unfriendliness of others. He can no longer assume the free-and-easy good-natured order of the normal secondary school, for the pupils are not 'taking any,' in the vulgar phrase. They don't want to be at school, and somebody's got to suffer for it, so obviously the teacher is the one person to take it out of. How much then depends on a wise, tactful handling on his part! Nagging is no good, driving is no good. Little will answer but a quiet good-natured persistence gradually calling forth an unconscious co-operation from a few until something of a class spirit is generated. Little by little such a teacher will win his way. He will beget respect, then confidence, and all the while he will be getting grip until there is a distinct change in the tone reflected, especially in the routine work and exercises of the class.

The first step has been accomplished and it is a step which has taken much compassing. Discourtesy or boorishness on the teacher's part would have merely deepened the pupil's resentment. Shouting and bullying might get work but no co-operation. Driving and nagging would secure the teacher in his feeling of 'top-dog,' but only at the cost of a subdued antagonism on the part of the 'Continuationer.'

It may to the earnest educationist or civic enthusiast sound tragic to be writing in this strain. Here is education put before the youth of the nation and it seemed at first like casting pearls before swine. The boys especially did not in general wish for it and would not use it. The tools of life would not be taken up that the work of life might be more efficiently, sanely, and happily performed.

It is clear that a period of tremendous stress is ahead of the nation, and nothing but training in efficiency and an increased mentality can prepare us to take our rightful place as a nation. Yet this is the answer of our youth. Any who have taught in German schools know the different fashion in which the work is approached, the different atmosphere surrounding the problem of continuation education.



## BRIDGING THE GAP

The work of the Day Continuation type of school is sufficiently varied to meet the needs of most students, and with an increased accommodation the curricula could obviously be widened in their range. To those who plead for a vocational course the simplest answer would be: 'Come and actually work at a continuation school for a year!' What would be discovered? The teacher would be appalled at the mental inertia of the average adolescent worker. Psychologically this might seem to be a class inertia only, but it is more deep-seated. It is an attitude of definite unwillingness towards mental exertion and a strong antagonism towards any conditions which call it forth.

There is appalling ignorance of elementary facts of history and geography; literature as such is hardly in the orb of the scholar. Routine arithmetic is fairly good, but there must be no call made on live thinking. The continuation school of the future, once established, will probably have fewer experimental problems to face. But to-day it seems to reveal how very little actual knowledge the normal elementary scholar gathers up in nine years' schooling. Does this point the need of much greater experimentation, especially along the lines of freedom, so that the actual 'self' of the pupil can be right inside the various work attempted?

Has the school been a show at which the pupil has been a looker-on instead of an actor? He or she has sat in the class and done much set work, but where has the personality been during these nine years? Teachers have seen work, inspectors have inspected, but how much has actually been accomplished? Judged by the standard of apparent knowledge gained the results are staggeringly meagre. The need is made evident of much smaller classes, more freedom in methods, less teaching, room for more initiation on the part of the children. The results attained under present conditions give furiously to think as to whether the education before fourteen can compare in value with that of after fourteen years.

The pre-fourteen is a period when the 'self' is barely present; it is plastic, unconscious, with little personal grip. All apparently is absorbed with little relationship to the real

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self. The educationist who came and took a class steadily—or a set of classes—of average boys and girls who had been away from the elementary schools for a year or so, would soon begin to look at educational problems with a new eye. The teaching profession itself must partake more of the nature of a vocation. There is needed a deep respect and reverence for the growing child. It needs to be looked upon more as the unfolding mystery of hidden life and power. We need a thousand William James's who might be permitted to undertake this mighty spiritual work of training the teachers to handle the mysterious matter of child nature and nurture. But this would not solve the problem whilst we leave barrack buildings and large class-rooms as a counter-attack on the freshness and originality of both teacher and scholar.

Before there is any real advance in the value derived from our national system of education large class-rooms must go. Large classes must be done away with. They ruin both teacher and scholar alike. There is under this system much absorption of facts but little assimilation of knowledge. The pupil stands apart from the education given, unidentified with the progressive development of fact and subject.

In the interests of further education the primary system needs a thorough overhauling. For as long as the primary school, the normal elementary school type, was looked on as an end in itself, obviously only one way of looking at things prevailed, but if it is to be just a stage in a graded system then its organisation needs to be considered with reference to further stages. A liaison officer need not be appointed, but the spirit and function of a liaison officer needs to be considered and maintained at all stages.

Children will tell that they have gone over and over the geography of the British Isles year after year. Is your continuation school going to start at once on the geography of England and Wales? 'Hallo,' will say the new pupil, *sotto voce*, 'the same dry old stuff,' or 'I've done all this before,' and promptly sink into dullness. He may never have mastered the subject, but that is not the point. History is one of the weakest subjects in modern education, judging from results obtained. You must know the beginnings, says the

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Oxford School. But for the unfolding mind there needs rather the dramatic imaginative approach.<sup>1</sup> But how can this be the method with a large class and a half-hour scheduled time for the lesson? The factory system model must be got out of the education of the future. It must be a matter of humanity and humaneness. Less will be taught, much more knowledge will be gained. Less surface cultivation, more depth must be sought.

We do not need to model our education on the system of France or Germany or the United States. Our national psychology is quite capable of evolving a method suited to the national genius. But the experience so far gained by Day Continuation School contact is dead against vocational training as such. Such experience only emphasises the more definite need of a cultivation of mentality, a general deepening of the personality, a wider opportunity for thought capacity to develop. The results generally show that the personality has been too little cultivated, that knowledge of facts has been the touchstone of progress to the weakening of capacity for thought, that there has been too much dependence upon the teacher, that the pupil should have been thrown in more on himself, that more freedom should be conceded to the child in order to attain a greater self-development. But these ideals are impossible in a large class under a harassed teacher, a rigid time-table, and an educational system which tests its progress by facts imparted and gained.

The important fact—developing child personality—is obviously obscured and the child is not capable of protesting for himself. This must not be taken as an argument or appeal for a ‘whole hogger’ application of the Montessori system to our national education. It is a claim for a true psychological approach not hindered by the extravagant expenditure of money on school buildings which have in many ways a bad psychological influence.

Children left to do as they like do nothing or run to mischief. There needs to be guidance, oversight, definite

<sup>1</sup> Compare Alec Waugh, *The Loom of Youth*, on the appeal of the dramatic method of teaching.



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teaching, but plenty of room for individual self-expression. The fact that childhood is in some degree a preparation for the sterner work of life cannot be hidden. Children need to be gently led along the path of thoroughness, completing the task begun, carrying through a job to the end. They need to be guided in tackling the hard and unpleasant, in resolutely overcoming the difficult. But a large class does not allow of oversight. Even if the teacher in a class of sixty should attempt it here and there, the majority of the others will be sitting bewildered waiting for the personal individual attention which can rarely be given.

Every encouragement should be given to the teacher or leader to get away from the parrot-like method. It turns out automata, not individuals with powers of thinking for themselves.

### III. THE DAY CONTINUATION SCHOOL AND A NATIONAL SYSTEM.

Obviously if Day Continuation Schools become a settled part of our National Educational System new problems will arise, for their effects will be felt backwards and forwards. They will influence the primary school, the council school, that is, which will pass the scholar on to them, but equally the continuation school will influence other grades of education. For instance, it will soon become clear to the teaching staff of the new type of school that certain pupils will profit by being passed on to a different grade of school. Such pupils should, therefore, be given a wider opportunity of educational development than 320 hours yearly can afford. Obviously such students should have the opportunity given them of a secondary school course. The continuation school should be able to act as a clearing-house for the further necessary training of adolescents.

It will discover that some will profit most by being passed on to a technical school, where they can further explore certain sides of their occupational mysteries. In this same connection the shortcomings owing to our lack of modern apprenticeship can be made good. Evidently there are few



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modern trades where a long apprenticeship is necessary. The cultivation of a keener mentality should of itself reduce such need.

But the Day Continuation School should also in some fashion be linked up with vocational training so as to be able to suggest how certain workshop deficiencies can be made good. This is not to suggest that the continuation school should become vocational. Every half-year a general report could be furnished to the employer of the average state of the grouped adolescent workers represented at the school. Suggestions equally could be received from the employer. There must be no 'stand-offish' sort of attitude as between school and works. The relationship must be one of hearty co-operation and friendliness.

Then the attention to the general development of the growing boys and girls needs to be considered as between works, school, and clubs. The Bournville Works have specific Boys' Clubs and Girls' Clubs which were running before the Day School experiment was inaugurated. But the probability is that school and club should be two sections of the one form of institution having to do with the welfare of the adolescent life of the nation. Otherwise the pull will all be on the side of the less organised club as against the more rigidly organised school. The club which provides mainly athletics and recreation would naturally be more popular than the school, which only provides mental pabulum.

So that such institutions as schools and clubs should, where possible, be run in utmost harmony and under one committee and one control—unless the school is to be regarded as the hard biscuit and the club conversely as all jam. If some such working arrangement could be carried through it would help to establish conditions of greater keenness and interest as between school and club, for the ministry of such an institution would appeal to the many-sided nature of a boy. It would allow for greater knowledge and possibilities of real friendliness between staff and students.

If such an arrangement were to be adopted it would involve a certain adjustment of the hours of the teaching staff and also recognition of the fact that time spent in supervising the

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club and leading games was as much a part of the effective work of the school as set lessons in class-rooms.

In fact the possibility of development along these lines should make these institutions of far greater value than if they were just book-knowledge imparting shops. For the right supervision and guidance of the leisure of adolescents is a tremendous asset to the nation. Street gangs, larrikinism, hooliganism are mainly the outcome of an unorganised leisure or a vicious environment. The Scouts, the Pioneers, the 'Elder Brother' (the American movement), Youths' Clubs, Girl Guides, &c., all show how adolescence responds to right leadership, even if discipline is involved, provided there is at the same time effective comradeship and wise outlet for activity. The training in self-government and self-control gained in helping to run a club or organise a scout troop calls forth faculties which are rarely allowed sufficient expression under ordinary school conditions. But in a democracy such training is just as necessary as the acquirement of a degree of bookishness.

If the same people who run the club life also work the school it allows for far more effective influence as well as more freedom in class work. There is co-operation as a starting point, and that is a great part of receptivity in book subjects, as well as presenting the right mental attitude for identifying itself with the work. Hence there will be a readiness on the part of the student for both assimilation and the display of thought. For it should be evident that the true end of the new type of school—the Day Continuation School—so far as it will affect the great mass of our adolescent life, is not merely to produce more knowledge or to make for greater efficiency, or even to ensure greater productivity. It should certainly converge on these ends. But its true vindication will be that the wider education should make for a finer type of manhood and womanhood. The youth of the nation should imbibe the art of life, greater happiness, greater thought, less individualism, more co-operation. The school should be a magnificent training-ground in citizenship, and a preparation for the exercise of the fuller privileges and responsibilities of adult life.



THE BEECHES, BOURNVILLE  
TEMPORARILY USED AS A GIRLS' DAY CONTINUATION SCHOOL





# THE GIRLS' SCHOOL



## A DAY CONTINUATION SCHOOL FOR GIRLS

MISS A. E. CATER.

### SECTION I.

**A**N apology would be necessary for the many deficiencies in this article except for the simplicity of its aim ; which is to express in a readable form some of the impressions and results of the practical experience obtained by six years in a Girls' Day Continuation School which, up to 1918 at any rate, was the only public school of this character in the country.

Now in this stirring year (1919), owing to the Fisher Act, Day Continuation Schools must be established in the near future, and our six years' experience ought to yield some information interesting to those about to commence similar work.

In October 1913 the Birmingham Education Authority opened the first public Day Continuation School for the part-time education of boy and girl workers between the ages of fourteen and eighteen. A fee of 2s. 6d.<sup>1</sup> was charged for a session of forty weeks. Messrs. Cadbury Brothers, Ltd., and Messrs. Morland & Impey undertook to make attendance at the school a condition of employment—such attendance to be for one half-day of three and a half hours once a week. The hours arranged were 8.45 A.M. to 12.15 (assembly at 8.25) and 1.45 to 5.15. In two years the numbers attending the Girls' School had risen to nearly eight hundred.

Owing to war conditions in 1917 a decline began, and an invitation was given to other manufacturers. Two only

<sup>1</sup> Fees have been discontinued.

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responded—F. E. Baker, Ltd., Precision Engine Works, Kings Norton, and the Kings Norton Metal Works. The former granted time off to all girls under eighteen for one half-day, paying an average wage for time lost, and after twelve attendances giving each a gymnastic costume. The fee was to be paid by the individual girls. Some twenty of the more thoughtful from office and workshop responded gratefully, and have attended regularly. In the case of the Metal Works, nine responded in 1917 and over thirty in 1918. Payment to each girl of one shilling was made by the firm for every attendance, money prizes were offered, help given with the gymnastic costume, but each attendance meant considerable loss to piece-workers, and many discontinued when this was realised.

There were a few private pupils—girls living at home helping their mothers—one in domestic service, and one serving in a shop, who attended on the early closing day.

### SECTION II.

#### *Staff.*

However important may be buildings, surroundings, and equipment, the one essential to make continued education a success is a supply of the right kind of teachers. Scholarship and professional training rank high, but personality and 'atmosphere' or general 'tone' easily transcend these in importance.

In staffing this school we have endeavoured to find women who have had experience in a secondary school or who come direct from the University. The former are accustomed to deal with girls over fourteen, and the latter have not had time to adopt those methods of discipline which, though doubtless necessary for quite young children and in extremely large classes, should be avoided in continuation schools.

Inquiries have been addressed to me as to the previous experience of members of the staff. Below, therefore, will be found some of the qualifications of successful teachers and subjects taught by them.



## STAFF

|                                  |   |  |
|----------------------------------|---|--|
| (a) English . . .                | M.A., Sheffield.  | No previous experience.  |
| (b) „ . . .                      | No degree or certificate but a wide reader, a contributor of literary articles—travelled and musical. Most successful with dramatic work. |  |
| (c) „ . . .                      | B.A., Manchester.   | Six years High School.   |
| (d) Arithmetic . . .             | B.A., Birmingham.   | One year High School.  |
| (e) „ . . .                      | M.A., Edinburgh.  | Academy, Scotland.   |
| (f) History . . .                | B.A., London.   | Higher Grade School.   |
| (g) „ . . .                      | M.A., Birmingham.   | No experience except practising and acting as supply at High School. |
| (h) Physiology, Infant Care, &c. | High School Education and Domestic Diploma of Battersea Polytechnic. (Three years' training and to include Science.)                      | Practising in London.  |
| (i) Physiology, Infant Care, &c. | Leeds Domestic Science Diploma.   | Secondary and Elementary teaching experience.                        |

Beyond a doubt the girls whose education at the most critical time of their lives has to be compressed into a few hours a week need the best teachers—morally, intellectually, and professionally—which the country can produce. It is unnecessary to enlarge upon the vital importance of the influence of a fine moral character upon the impressionable imitative natures of young people.

At the same time scrappy knowledge and poor or unsuitable methods in a teacher produce boredom which may lead to serious trouble with regard to attendance and discipline. Specialists are needed for this intensive teaching; and wide knowledge of a subject as well as mental training are probably best secured by a degree course. Again, without professional training, however naturally gifted teachers may be, and however good their degree, they gain their experience at the expense of the taught. The girls show keen appreciation of matter and method in the subjects studied. They are shrewd in detecting deficiencies—‘She’s very jolly but she

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doesn't know much about it' (said of a temporary mistress who was not a specialist). 'Please, Miss —, may we have a proper teacher for — next term?' (they were being taught by an untrained teacher).

Scholarship and training prove more valuable when accompanied by social qualities. The gift of easy conversation, ability to play simple accompaniments and dance tunes, to sing a pretty song or recite a fine poem, all contribute powerfully to the success of the social side of continuation school work.

And there are other essentials, such as sympathy, tact, self-abnegation, and—a sense of humour. How these young people appreciate a youthful heart, showing itself in a vigorous, jolly enthusiasm, in company with an entire absence of artificiality in any form! Is it not easy to understand this request to a mistress about to leave: 'Do ask Miss — to get us some one young!' Unfortunately the supply of good teachers at the present time is not equal to the demand.

There is a natural and deplorable tendency, much strengthened during the War, for some of the most intellectual, capable, and interesting people to refuse to enter this noblest of professions owing to the wholly inadequate emoluments hitherto offered by educational authorities.

A successful manufacturer remarked the other day: 'I give my lady secretary £400 a year and a bonus on profits. No child of mine, nor a friend if I could prevent it, should ever enter the teaching profession.'

If teachers of every grade are to preserve their freshness and avoid the stodginess and 'gaucherie' hitherto associated with many belonging to the profession, they must receive such remuneration as will not only secure a certain measure of economic independence but will enable them to procure books, opportunities for travel, social intercourse, and healthy recreation.

Some people have poured scorn upon the idea that Girl Guide Officers and Social Workers should be employed in the new schools. Yet it seems a far wiser course than to

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allow full-time schools to be deprived of their teachers until enough gifted and trained graduates are forthcoming.

In cases where such women have received a good education and have the essential qualities for leadership, it would be infinitely better to allow the formation of companies for Guide Training under them, than to give these girls a hatred for the new schools and turn them into very determined passive resisters by forcing them to study uncongenial subjects with unsatisfactory teachers. Many girls who joined the V.A.D. hail from some of the best schools in England. Some have public spirit, a high sense of honour, esprit de corps, and a desire to give themselves in the service of others. They speak King's English with a pure and beautiful accent, and appreciate literature in its finest forms. Amongst them can be found good 'sports' who will train girls to 'play the game' as well as hockey, tennis, cricket, &c., and such would surely be invaluable if they could be induced to help with the new schools for a time.

### SECTION III.

#### *Aims and Curricula.*

In discussing these important questions how shall the adolescent girl be regarded? Shall she be looked upon merely as a wage-earner whose powers must be developed to make her increasingly efficient—an effective part of the great industrial machine—or since she is a potential woman, a possible mother of the immediate future, shall her studies be confined to domestic subjects, or in the short time at her disposal can she be developed on such broad humanitarian lines as will enable her to fill worthily either of the above rôles and enter into a wider, fuller enjoyment of life?

It is interesting to examine what has been done up to the present with regard to education given in working hours. Does this far-sighted aim—the production of the finest possible men and women—inspire the schemes attempted up to 1917? One firm in the North then confined its educational scheme



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to the office staff. The teacher was a clerk, the subjects taught touched exclusively on office routine—the aim there was surely efficient clerks, rather than the development of the individual. In several others, with a similar object in view, the classes give technical instruction in various engineering and other operations required in the workshop. The Prussian Technical Schools, which admittedly offer no subject serving any other purpose than acquisition of technical skill and knowledge and the promotion of industrial efficiency, are probably their models. Still another firm takes a kindly but surely a circumscribed view. Realising the need for every woman to be ready when occasion offers to assume the domestic rôle, they limit instruction to physical exercise and household subjects. The district from which the girls in this case are drawn may yield a poor average type of mentality, but, on the occasion of a visit to the school, there was certainly a notable contrast between the handsome buildings and excellent apparatus on the one hand, and on the other the bored, lethargic, unintelligent expressions of the girls. Domestic training is undoubtedly right and useful for every woman, but would it not be possible to take Cookery, Laundry-work, Dressmaking and Housewifery in rotation year by year, thus allowing time for the study and discussion of such liberal subjects as Literature, History, Civics, &c. ? Such a course would surely prove more inspiring and yield happier results ! With brains stimulated, minds widened, powers of expression and of concentration increased, and general intelligence awakened, far greater interest would be given to practical, technical subjects, which though they, too, promote development of some of these powers, probably do so more slowly and in a far less degree.

A little sympathy and imagination would deter any management from confining education to domestic subjects, essential though they are. Before coming to work the girls may have prepared the breakfast and washed up dishes, and some may have known that on reaching home that evening there would be more dishes to clean, possibly a wash to do or to 'get up,' or a room to turn out ! The attitude of the Labour Party to







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this subject of curricula is interesting and instructive. Clearly its adherents should be opposed to any limited scheme. At a Conference convened by the Workers' Educational Association and attended by delegates from 132 Trade Unions and other Societies, twenty hours a week for education were vociferously demanded, and yet the total exclusion of vocational training was loudly applauded. What was behind such a demand? Do these men fear that boys and girls trained in their trades will be able gradually, because of superior knowledge, to oust adults who work only by instinct or the light of experience? Do they demand twenty hours hoping that such a scheme will sweep the market almost clear of adolescent labour and so ensure sufficiency of employment for their elders? Or are the masses at last awaking to the fact that knowledge is power; that general and unspecialised education on a spiritual basis gives a joy in life and a training to intellect and character obtainable by no other means? But in an all-round scheme of twenty hours vocational training should surely have its fair share of attention—why do they fear it? Is it suspicion of the claims of capitalism, or do they dimly realise that this aspect has been unduly emphasised in Germany with baleful results which they do not wish to see repeated here in England? They have not yet obtained the twenty hours demanded, but with eight at our disposal much can be done. Perhaps, in the future, continuation schools will provide general, unspecialised training, whilst technical and evening schools will supply opportunities for young people who are willing and able to learn a trade.

Unfortunately, up to the present there does not seem to have been any great desire on the part of employees for technical efficiency. There might be more ambition in this respect among the workers if employers would make some effort to interest them in the finished product. How much less monotonous would be all repetition work—one of the curses, however necessary, of industry—if before starting a job the young worker could be shown as much as possible of all the processes through which the completed article has to pass. A girl whose entire working day is passed feeding

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sheets of paper into a machine was asked if she did not admire the beautiful ledgers which she was helping to make. But she had never seen one! Watching girls endlessly packing matches into boxes I asked if they were not interested in the machinery which so accurately prepared the tiny pieces of wood. But complete ignorance was shown of any of the very interesting processes through which a match has to pass.

When this school was opened in 1913, we were allowed the greatest liberty in trying experiments, and have received from the Local Education Authority in many ways most sympathetic treatment. In addition, the firms sending students to the school have never attempted to usurp those functions with regard to curriculum and administration which belong properly to the profession.

In framing the curricula we have kept before us the ideal that all education which is limited and narrow must fail in its object. It should include the development of all the powers of spirit, mind, and body. It must secure social and moral responsibility as well as intellectual power and economic capacity, and these depend more than is often realised on physical fitness. It is essential that the popular habit of considering education as confined to the intellect should be corrected as quickly as possible. A working woman remarked that she had no use for education. Her brother was a college man with a degree and he was one of the worst men she knew!

The curriculum for the  $3\frac{1}{2}$  hours does not include any direct religious teaching, but from the beginning the girls who care to do so have assembled to sing a hymn, join in a short extempore prayer, and listen to a ten-minute address.

After the school had been running for about one year, in order to attempt to inculcate the habit of communion and some sense of awe and reverence, a few minutes' silence was introduced at this assembly, and in the opinion of all the staff this departure has had a marked effect on the demeanour of the girls and on the tone of the school. Many spontaneous testimonies have been received from girls after leaving the



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school as to the help received from this assembly. But in the long run the spiritual development must depend, of course, on the intercourse between the spirit of the teacher with that of the taught.

### *Physical.*

From the outset it was decided that every girl, whatever her age, must give three-quarters of an hour a week to Gymnastics, under fully-trained Mistresses. The latter, with apparatus (and for their own workers, complete costumes), have been provided from the commencement by Messrs. Cadbury Brothers, Ltd.<sup>1</sup>

### *Mental.*

As everyone knows, work in factories tends to become more and more automatic and of a repetitive character. It requires alertness, rapidity of movement, and reliability, but comparatively little initiative, imagination, or reasoning. Indeed, girls very nearly mentally deficient, with little or no power of consecutive thought, can be trained to perform rapidly and correctly simple automatic operations. Moreover, such work has a benumbing effect on the brain, and those engaged in it acquire a distaste for any close or prolonged mental exertion, unless some special effort is made to counteract the inertia. Girls of fourteen come to the school alert and eager to learn, and most appreciative of the lessons given. After some three months these qualities tend to disappear, and increasing pressure is required to induce them to attack difficulties and to persevere. Arithmetic and problematic questions in Literature and History become burdensome. They want to listen and be amused—anything rather than *think*. It is, however, interesting to note that as the age of seventeen approaches often the inertia disappears and the more intellectual types, at any rate, become keen on using their brains. After a year's experience, taking the above

<sup>1</sup> See below, p. 37, 'Physiology and Hygiene,' also p. 105.

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facts into consideration and noting the prejudice against continuing subjects already begun in the primary schools, we decided that any work which would awaken interest, stimulate the brain, and increase the general intelligence ought to have a beneficial influence, not only on the girl but on her work in the factory, whatever its nature.

Arithmetic was retained. By means of problems, graphical work, suggested decimal coinage and the metric system, fresh ground was broken. Many of the girls are paid by piece-rate on a decimal basis, so all are required to work out wage sheets. In every class the same difficulty emerged in the number of girls who had never mastered the first principles of arithmetic. Some could not work fractions, others had but a rudimentary notion of decimals. The weaker mentalities had to confine their attention to household accounts. To popularise the subject Algebra was utilised but did not prove a success.

So much depended on creating a love for mental effort that the possibility of introducing *chess* suggested itself. Would it not be equally useful in developing the reasoning faculty, carefulness and accuracy and, in addition, good judgment, foresight, and many valuable qualities? But would the Board of Education smile upon such an innovation? Where could the teacher be found with real scientific knowledge of the game and the power of holding a class? <sup>1</sup>

With twenty-five or even less in a class, taught by keen, patient, well-trained teachers, with a thorough knowledge of their subject, the girls found it possible to ventilate their difficulties, and now when voting for subjects there are very few who omit Arithmetic. At a sessional examination one class was asked whether this subject should be studied and a reason was to be given for the reply. A girl of sixteen voiced a general feeling when she answered in the affirmative, 'because it seems to do for the mind what a tonic does for the body.' At the present time a number of clerks and others are taking a more advanced course, intending to test

<sup>1</sup> Since this was written a full-time school has attempted the experiment, and with encouraging results.

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their work by entering the Commercial Examinations held annually by the Royal Society of Arts.

The study of English Literature was also retained in all classes. This did not present the same difficulty. The reading of interesting books and discussion of the problems raised is always popular. The girls are beginning to realise, too, how terribly handicapped are people who grow up unable to express their thoughts either in words or in writing. What pain, inconvenience, and injustice the uneducated sometimes suffer, simply because they cannot state their case in such a way as to elicit attention! Many of us must be struck by the apparent lack of courtesy and self-control exhibited by working men in a discussion. Is not this often due to the fact that whilst ideas are seething within their minds they yet find themselves inarticulate and their mental agony expresses itself in rage and impatience? Our girls must have the power of expression developed, and this is done by debates, viva voce and written composition, discussion and narration. At the same time every effort is made to develop judgment and imagination, and I need scarcely add to open the pupils' eyes to literary beauty. We are increasingly convinced that girls often read corrupt literature because it is talked over amongst themselves, and not knowing the titles of better books they cannot ask for them. Guidance is badly needed. Another subject which seldom fails to rouse interest is the history of the growth of the English language. I remember once having a talk with some of the elder girls on why we should not introduce simplified spelling. This led to a search into the derivation of words and modification of forms. They were intensely interested, one of them remarking: 'Well, we never heard anything like this before! I suppose you get it in your High Schools?'

When every method of raising interest in a book fails, dramatisation, where it is possible, is, even with mentally deficient types, fairly certain to succeed. Jane Austen is not, at first, a popular writer with twentieth-century wage-earners; but when one of our classes had arranged part of 'Pride and Prejudice' in dramatic form, and had then studied and



## THE GIRLS' SCHOOL

acted the scenes so arranged, they were able to enter into the spirit of another age and learn to appreciate the delicate subtle humour. This dramatic part of the work has not been developed as much as we should like owing to lack of time—three-quarters or one hour a week is the maximum given to the subject, unless a voluntary second attendance is made. Some time, too, must be ear-marked for studying grammatical construction, letter-writing, meanings of words, &c. Dictionaries (with derivations given) are popular. Girls still enter the school who have never seen such a book and do not know how to use it. In the school records are kept some interesting work done by the girls in English, and as I write I have before me 'The Pilgrimage to Sleep,' too long to quote. It is a little story of three children who set out to find the land of sleep, and as they pass through the garden 'The birds have hushed their song to the flowers, who stand drooping their heads like tired maidens. Their sweet scent is wafted high upon the soft evening breeze.' Worn out with their wandering the eldest recalls their mother's lullaby :

Sleep, my little ones, sleep.  
Soft blows the wind from the west ;  
Far in the forests deep  
Turtle-doves coo in their nests.  
Sleep, my little ones, sleep.

This is the home-work of a town-bred girl employed in a factory during the day, whose knowledge of the country must be gained by walks on Sundays and holidays. Another factory worker attempts a prose poem under the title 'Evening has Come,' beginning :

Dear little butterfly, close your wings, for  
Night is stealing o'er land and sea, and the baby angels are smiling.  
Sweet little birdie, close your eyes,  
The sun has vanished and the last purple streak has gone from our sight, &c.

Here is a 'Call to Arms' :—

Go forward, young man, why lingering here ?  
Your mind full of doubt, your heart full of fear.  
Where's the brave spirit we've boasted so long,  
Written in poems, exalted in song ?





CONTINUATION SCHOOL GIRLS WHO TOOK PART IN  
'THE TEMPEST.'



SCENE FROM 'THE TEMPEST'

PROSPERO

MIRANDA

FERDINAND

## AIMS AND CURRICULA

Your King and your Country are calling to-day ;  
Go ! do your duty like Britons—away.  
Are you afraid of wounds and of pains  
And of sudden death ? Why, 'tis but a gain,  
For you must die once, and what better end  
Than to die for your Country, your King; and your friend ?  
Go forward, young man, for duty is best,  
Fight with your might—to God leave the rest.

In addition to stories and poems the records contain descriptions of imaginary conversations of word pictures : ' For she did not seem as dead ; ' <sup>1</sup> in the books studied in class such as a ' Scene on the Mississippi, ' <sup>2</sup> ' The Church of Grandpré, ' ' The Garden of the Nymphs, ' ' Ellen's First Meeting with the Knight of Snowden, ' ' An Arm Clothed in White Samite, ' <sup>3</sup> ' The Spirit Ship. ' <sup>4</sup>

Essays on such subjects as : ' Characteristics of Tennyson, ' ' Imagination in Everyday Life, ' ' Characteristics of a Successful Orator, ' ' Not every writer of verse is a poet, ' ' Educational Value of Picture Palaces, ' ' Use and Abuse of Books, ' ' The Moral Effects of the War on the Nation. '

As showing the keen appreciation of the girls for this subject, when last year Messrs. Cadbury Brothers allowed eighteen girls over eighteen years to continue attendance at the classes, one of the subjects chosen was to read and compare the Tragedies of Shakespeare, including the psychological problems contained in them. It may be interesting to append some popular books, always allowing for the fact that the same book may prove dry and boring in the hands of an indifferent teacher. No woman who lacks imagination, a sense of humour, or some dramatic power, can successfully take this subject. Milton's ' Paradise Lost ' ; Shakespeare's finest plays, particularly ' The Tempest, ' ' Julius Caesar, ' ' Hamlet, ' ' Macbeth, ' ' King Lear ' (which plays might be omitted in primary schools), ' Midsummer Night's Dream, ' ' Merchant of Venice, ' ' As you Like It, ' ' Twelfth Night, ' ' Coriolanus ' ; Tennyson's poems, especially ' Enoch Arden, ' ' Coming and Passing of Arthur, ' ' The

<sup>1</sup> *Lancelot and Elaine.*

<sup>3</sup> Tennyson.

<sup>2</sup> *Evangeline.*

<sup>4</sup> *Ancient Mariner.*

## THE GIRLS' SCHOOL

Marriage of Geraint,' 'Geraint and Enid,' 'Lancelot and Elaine'; George Eliot's 'Adam Bede,' 'The Mill on the Floss'; Jane Austen's 'Pride and Prejudice'; Stevenson's Essays; Longfellow's 'Hiawatha' (girls of fourteen) and 'Evangeline'; Arnold's 'Sohrab and Rustum'; Haggard's 'Lysbeth'; Carroll's 'Alice in Wonderland'; A. E. W. Mason's 'Four Feathers'; 'Mrs. Wiggs'; 'Cranford' (only popular when dramatised). Some of these books have been introduced to persuade girls who have only attempted short stories to read a consecutive tale.

In the future it will be wise for primary and continuation teachers to confer in order to decide among other things what books particularly suitable to the adolescent can be eliminated from those introduced to younger children.

We do not claim to use any methods which are not already being adopted by every progressive school in the country. But it seems wise to emphasise the fact that the short time available for studying the subject and the increased nervousness, sensitiveness, and self-consciousness of girls between fourteen and eighteen make these methods far more difficult to carry out than in ordinary schools. A very 'delicate touch' is needed and much discrimination.

A library with a fine selection of books exists in the Bournville Works which, for some reason, is not much used by girls under eighteen. By means of entertainments and collections we have raised some £20, and hope soon to have at the school works of fiction and non-fiction for the use of all the students. Many books are already in circulation, and the girls who are handicapped by ignorance of titles and authors much appreciate the help given by the members of the staff in making a choice.

A third subject taken by some of the girls is Social and Industrial History. It is very difficult to rouse interest in conditions existing centuries ago. We therefore decided, when this subject was first introduced, to go back only a short time. As the industrial revolution began in the eighteenth century our study of Social History begins with that period. The girls discovered for themselves conditions existing at that





THE CHALLENGE SCENE FROM 'RICHARD II'

(GIRLS OF 17)



## HISTORICAL PLAY

WRITTEN BY A STUDENT AND ACTED BY HER CLASS

## AIMS AND CURRICULA

time by reading Fanny Burney's diary, 'Evelina,' and extracts from diaries and contemporary newspapers cyclostyled by the History mistress. They then compared housing, food, streets, society, &c., with present-day conditions, and incidentally learnt a good deal of 'Citizenship.' The second year they gave to Industrial History, which was studied by reference to contemporary literature, Blue Books, and Factory Acts. In discussing 'Strikes' and arbitration they read and acted Galsworthy's 'Strife.' Sham conferences of employers and workers discussed the minimum wage in certain trades. I walked into such a conference one morning just in time to hear an indignant 'employer' asking how he could continue to run his factory if he gave the exorbitant wage demanded. One could not help thinking how soon the disputes between Capital and Labour would be settled if both would realise that their greatest enemy is ignorance and powerlessness to see each other's point of view. Another popular syllabus was the study of great movements by means of biography: The Earl of Shaftesbury, Elizabeth Fry, Florence Nightingale, and Hannah More. Modern Problems (History of Education, Extension of the Suffrage, Feminism) and European History have been chosen lately, and the last-year girls (seventeen years) are making excellent efforts to grapple with the greater difficulty which these present. When backward girls of this age show distaste for History, talks on Current Events are taken instead.

Girls of fourteen, instead of studying History, may give two years to Physiology and Hygiene. The care and development of the body are not achieved merely by activity in a gymnasium; knowledge of its construction and of the functions of its parts is also needed. The anatomy is first studied. By observation and feeling the pupils endeavour to draw a diagrammatic skeleton, putting in the number of bones they judge to be present. An actual skeleton is then put before them and corrections made. By means of the microscope, models in cardboard, plaster, and glass, and the organs of animals, the subject is made vivid, real, and interesting, and exercise is given in accurate observation. Truths

## THE GIRLS' SCHOOL

are discovered and defined, and the habit of methodical accurate thinking inculcated. Moreover, they begin to experience the joy of searching for Truth. Those who have taken this subject for two years are much more intelligent when with nearly all the rest of the girls they give a period of the third year to Sick Nursing and First Aid. Such knowledge, again, stands them in good stead during their last year at school, when every girl studies Infant Care or Mothercraft. This was introduced in the session 1916-1917, by which time the school contained over 200 girls who had reached the age of seventeen.

Of late years much thought and discussion have centred round the subject of teaching in schools facts connected with sex and the origin of life. Ideally, a simple explanation should be given by mothers to little children before the age of nine years, as soon as curiosity is evinced. Failing this, it is my personal opinion that continuation schools will offer the most fitting opportunity for such instruction at the age of sixteen or seventeen. This opinion, however, is opposed by many social workers and primary school head teachers (and further experience may bring me round to that opinion) on the ground that knowledge on this subject begins early, and instruction should, therefore, keep pace with it. It seems to me that no amount of talks in the primary school, which must, of necessity, be of a most elementary nature, will do away with the deplorable social evils so injurious to young children. The cause for the too early knowledge lies in the disgraceful housing conditions which obtain in town and country, and the disastrous effects will not be destroyed until the State grapples with this problem and provides houses at a possible rent with sufficient rooms to house children decently. The less the attention of most young people between thirteen and sixteen is drawn to this subject of sex, the better. Its discussion hastens the awakening of sex-consciousness and after its dawn concentrates thought upon it. Safety lies, as I believe, in retarding consciousness and diverting attention from the subject by filling the leisure time with pleasurable occupations and hobbies such as are supplied by



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sports and the multifarious interests of Boy Scouts and Girl Guides, gardening, and the like. Unfortunately, up to the present very few of the children attending primary schools have organised recreative interests, and though, in some cases, paid employment out of school hours may distract attention and work off physical energy, the majority of children between twelve and fifteen have been thrown back upon conversation and loitering in the streets for recreation. These may, therefore, be more liable to temptation than those better employed, but I am still of the opinion that the morally contaminated are on the whole isolated cases who can probably be detected by the intuition of experienced women, and these should be given direct advice, instruction and warning, in private.

The right person to be responsible for all such instruction is undoubtedly the mother, and with the increase of schools for mothers they will gradually take over all the early guidance necessary. For the teaching of Mothercraft special training is essential. The Battersea Polytechnic gives an excellent three or four years' course, including practical work at Crèches and Welfare Centres. The studying of this subject seems to have had a most beneficial influence on every type of girl. At this age they are able to appreciate its immense importance. The atmosphere in the classes has been beyond criticism. It is treated scientifically from the first and includes prenatal influences, causes of infant mortality, not omitting venereal diseases, the physiology and hygiene of the productive organs, as well as the care of the infant. The text-books used are 'Our Baby' and Dr. Beatrice Webb's 'Health of Working Girls,' a valuable work in this connection, and for reference 'Feeding and Care of Baby.' So much have these lessons been appreciated that for the past two years the Old Girls' Association connected with this continuation school has asked for an evening course each winter in order to continue studying this subject.

Stages I and II (generally aged fourteen and fifteen years) are allowed half-an-hour for Class Singing, the last period of

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morning school. The mistress responsible for music has a large collection of songs, which can be borrowed a week at a time on payment of one penny.

Towards the end of last session permission was given by Messrs. Cadbury Brothers for girls to attend a second half-day with some loss of wages. We doubted whether twenty would be found willing to make the sacrifice, but out of over 600 girls more than 200 responded. Most of them desired either to improve their positions as clerks or to qualify for clerkships, and at their request they are having further lessons in English and Arithmetic and are studying Botany and Commercial Geography. Some of the girls withdrew after the first six months. When questioned, they gave the following reasons: (1) They cannot afford to lose any money; (2) 'the classes do not seem the same as in the morning'; (3) they 'don't like it.' But to these must be added (4) objection to being corrected when they need not come unless they like; (5) objection to working at a difficult subject (Geography); (6) bad grading—quick thinkers being classed with slow ones; (7) too little exercise or change during a long period—only a quarter-of-an-hour break from 1.30 to 5.15. By arranging a larger number of much smaller classes (6) has been rectified, and by allowing half-an-hour Folk Dancing objection (7) has disappeared, so that discontent has largely vanished.

Except in one or two voluntary classes circumstances have compelled the omission of painting, varied handwork and domestic subjects. These are all obtainable at Evening or Art Schools, and can be studied after work without undue exhaustion. They are essential to any ideal scheme, but need not necessarily be included during those valuable eight hours.

The really excellent progress made by some girls is partly due to compulsory homework. Every student is on her honour to give half-an-hour a week to one subject as a minimum. Excuses for omission are brought to the head mistress, carefully weighed, and usually accepted. A rigid record is kept. At the end of the year an examination lasting

## AIMS AND CURRICULA

two hours is given in each subject. The curricula suggested for Session 1914-1915 were as follows :

### *Ages 14 and 15.*

|  |               |
|--|---------------|
| English, Arithmetic, Physiology and Hygiene or<br>Social History, Gymnastics . . . . . | 45 mins. each |
| Class Singing . . . . .  | 30 „          |
| Dressmaking in evening . . . . .   | 120 „         |

### *Age 16.*

|  |               |
|--|---------------|
| English, Industrial History, Sick Nursing and<br>First Aid, Gymnastics . . . . . | 45 mins. each |
| Arithmetic . . . . .   | 30 „          |
| Cookery and Laundry in evening . . . . .   | 120 „         |

### *Age 17.*

|  |               |
|--|---------------|
| History, English . . . . .                             | 60 mins. each |
| Infant Care, Gymnastics . . . . .                      | 45 „          |
| Housewifery in evening or additional morning . . . . . | 120 „         |

Some employers, invited to support the school by sending girls, remark when our scheme is unfolded to them, ‘ In a word you wish to exploit me for the good of the community at large !’ Yet how short-sighted is such a view. Can a girl conceivably be of less value as a worker if she is developed physically, is learning to reverence the potentialities of her own womanhood, being trained in self-control and self-knowledge, gaining in power of concentration and application ; if her imagination is being quickened, her judgment and critical faculty developed, love for beauty, truth and goodness engendered, memory strengthened, accuracy increased ? Will she be more or less amenable when she has been trained to see all sides of a question and to express her views clearly and fairly ? Will she be more or less pleasant to work with when she has acquired refinement of mind, speech, and manner, consideration for the community of which she forms a member, and has become conscious of her duties as a citizen ? Such should be some of the results of education conducted on right lines by the right people.

This general cultivation of intelligence has also the effect



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of making girls specialise in subjects that appeal to them. For instance, two over eighteen attended classes on machine drawing. They are now employed in the engineer's office.

Whilst the Local Education Authority and the firms concerned may with advantage make suggestions as to curricula, in the last event this matter ought to be left in the hands of the heads of schools. They alone can tell what subjects will be of most educational value to the various types of girls, and they will be limited in their decision by the qualifications of the teachers available. They need the greatest freedom and latitude for making experiments. Only in this way will the best solution of a most difficult problem be discovered. If girls are to enjoy the eight hours at their disposal it will be wise to include for all of them Gymnastics, Folk Dancing, Singing, English and the Physiological subjects. All of these are enjoyed by the majority of girls of every type. I venture to hope that the anomaly of making head masters responsible for girls as well as boys will not be continued in the new schools. Probably few Education Authorities will permit the continuance of such an unwise and unjust arrangement. Only a woman should be finally and solely responsible for the education and training of adolescent girls.

### SECTION IV.

#### *Grading.*

The question of grading girls, the majority of whom were fourteen years of age, but who also included those who had left school one, two, and three years, was an interesting one. On entrance they were arranged according to the standard attained in the primary school, in classes with a maximum of twenty-five. Experience has taught us that Standard VI in one school is equal to Standard VII in another, whilst there is seldom any appreciable difference either in knowledge or development between VII and Ex-VII. The experience gained by the American Army in applying psychological tests may help us in days to come. Such tests may prove



## GRADING

invaluable in grading for the first time for continuation schools. Girls on entering the school have shown little inclination to use their thinking powers, although there has been improvement lately in this respect. The chief differentiation lies in greater or less ability to read, write, and spell, to show initiative and self-reliance in grappling with difficulties, and in power of self-expression verbally and in writing. From Standards V and VI we have received children even after nine years at school utterly illiterate and unable to perform accurately, if expressed problematically, the smallest arithmetical test, such as simple addition and subtraction. The marvel, however, is, that considering the numbers which primary teachers have to deal with they should have gained the excellent results seen in some girls. The country owes a debt of gratitude to this noble army of martyrs, for such they have undoubtedly been. At the end of about six months, or earlier, various types become distinguishable. There is the quick subtle thinker, the equally quick but superficial one, the slow, groping, mole-like mind, the intellectual yet practical, the dull, lethargic, and indifferent, the wilfully illiterate (whose mother is good enough and 'she never had no eddication'!), the illiterate through environment, and lastly the sub-normal, almost mentally deficient. (These latter we took for really 'deficient' until we had visited a school reserved for such!) The types mentioned above are gradually arranged in groups as circumstances will allow and often pass up the school together.

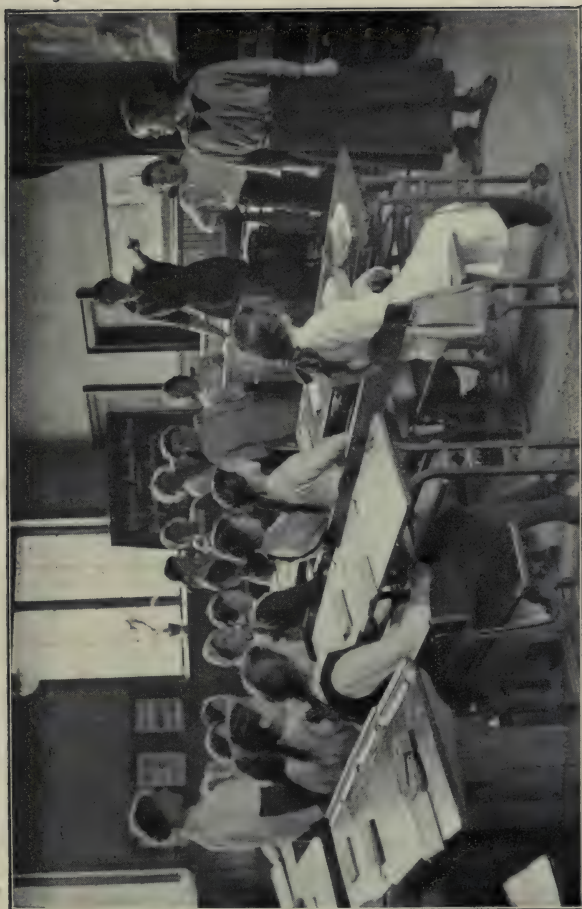
There are and must always be limitations imposed by the number of teachers and rooms available, by the ability of a firm to spare girls of a particular type at a given time, by the wisdom of combining girls of about the same age, by their own desire not to study certain subjects, and by considerations relating to the question of discipline. Limitations not imposed are those connected with the type of day school they had originally attended (primary or secondary) and the positions held by the girls in the factories (clerical or manual). In spite of this, though grouped according to mentality and progress, it is often found that girls from secondary schools

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and those employed in offices tend to collect together, but always with some admixture of others. At the end of each term a Staff Meeting is held, lasting sometimes two or three hours, at which every class is carefully discussed and arrangements made to transfer girls who have outstripped the rest or who are too slow or backward for their class. In this way the difficulty so well known to every teacher is obviated—that of having in a class one or two girls who capture every question and answer it whilst the rest prepare to think about it, and at the end a tail of girls never able to keep up with the rest, pathetic images of hopeless boredom.

Up to the present the chief difficulty has rested with deficient intelligences. Even these show a gradual but encouraging improvement in power of self-control and self-expression. They cordially detest any abstract ideas or appeals to their reasoning faculties. They will never attempt more than the simplest calculations in arithmetic. They evince the same extraordinary interest in dramatic work as is shown by all the girls. But we are less satisfied with them than with any other types. Probably their development, mental and spiritual, would be more rapid and pronounced if their minds were appealed to through their fingers. In time I hope we may secure teachers to give such subjects as basket-making, metal-work, use of tools in a household, and similar subjects.

Two of our difficulties will be eliminated from the Fisher Continuation Schools. First that of grading girls who had left the primary schools two or three years. The stage of development attained and the amount of knowledge retained were difficult to gauge, and whilst we were gaining experience some girls were marking time, whilst others were floundering in a Slough of Despond because unable to keep pace with the thinking powers of their companions, leading to difficulties of discipline. Secondly, as girls of this age were taken on at odd times by the firms concerned, rather than allow the gap between primary and continuation work to be more widened we accepted them into the classes any week throughout the year until the last term of the Session. Objections to such



CLASS IN ENGLISH LITERATURE  
'POLYDECTES BANISHES PERSEUS'





## GRADING

a scheme are too patent for comment. In the new schools girls of fourteen will leave the primary schools *en masse* at the end of the term during which they completed their fourteenth year. Then new classes can be formed at the beginning of each term in the continuation school. Since numbers have diminished in our school owing to the War, another fact has been emphasised, namely, that grading is more successful in a school containing a large, rather than a small, number of classes. For example, suppose that a factory takes on some girls of fourteen, and half a dozen can be best spared on Tuesday morning. Three are bright intellectual types. There are four classes running that morning—A, girls of 17, mediocre ; B, of 16 years, slow and backward ; C, 15 years, quick and intellectual ; D, 14 years, slow and unintelligent. A theorist would say at once that they could work with Group C, though of different age. They could, and would need to do so, but they would be handicapped, for those girls have already worked a year at their Syllabus, and in subjects like History and Physiology the lack of that year's course would be serious, whilst with eight or more classes running, there would be more than one type of mind for each age, and the girls could join a really suitable set. Corporate life too is more easily realised in the presence of large numbers, and speaking comparatively a smaller staff would be required. On the other hand it would be difficult for the head mistress to keep in personal touch with so many. Working five days a week she would come in contact with 1000 girls. She would probably have a minute and thorough knowledge of all the obstreperous young people who are most in need of help ; the best as prefects and officials would be her colleagues ; the mediocre would be the difficulty. Even with 800, in 1915 personal touch was scarcely maintained with much effort. But in this, as in every case, power increases with experience. The card system is, of course, indispensable. A book of interviews helps, but yearly examinations and reports, added to inspection of homework, have proved great aids to knowledge of individuals. Before writing the reports the specialists who have taught

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a class of girls meet and quickly sum up their impressions whilst the head mistress makes notes. Even for 500 to 800 girls this has been a most lengthy operation. Primed with a certain amount of knowledge of both girl and mistress it is possible to arrive at a fairly correct estimate of character and progress. We seldom attempt a detailed report till girls have attended more than one year. Up to the present these reports have been issued to firms only, but when more clerical assistance is available a separate one will be sent to the parents or guardians of each pupil.<sup>1</sup>

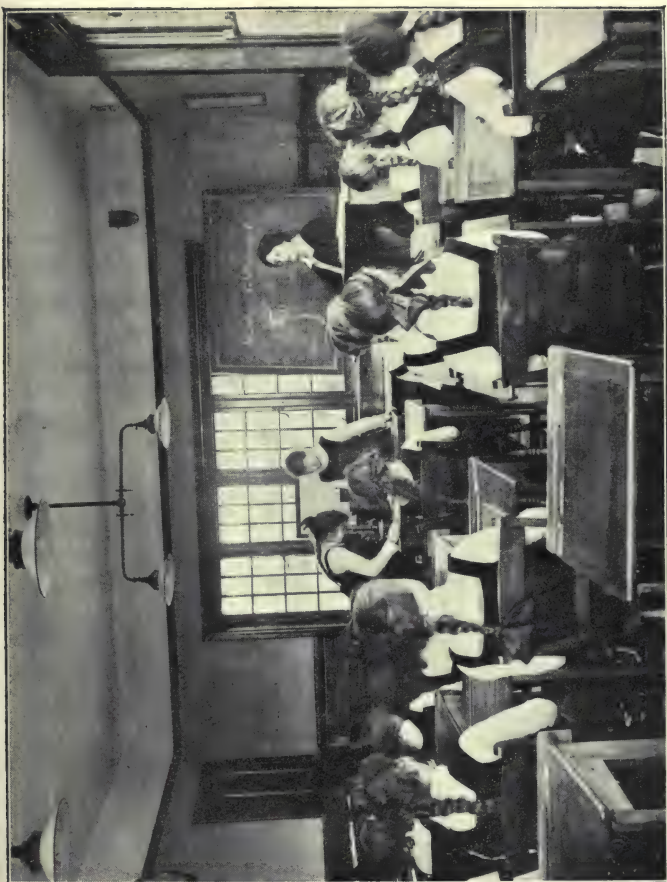
### SECTION V.

#### *Discipline.*

Problems connected with discipline which we have had to solve will, in many cases, automatically disappear in the Fisher Schools. The most difficult have arisen with girls who, after enjoying two or three years of 'freedom,' were compelled to return to school. The very name 'Day School for Young Employees,' with its total lack of beauty, dignity, or imagination, its suggestion of a return to well-trodden paths when the spirit was aching for fresh scenes or pastures new, was enough to rouse antagonism. Indeed the girls of sixteen or seventeen have been known to hang round shop windows in the neighbourhood till no one was looking and then dash into the Institute.

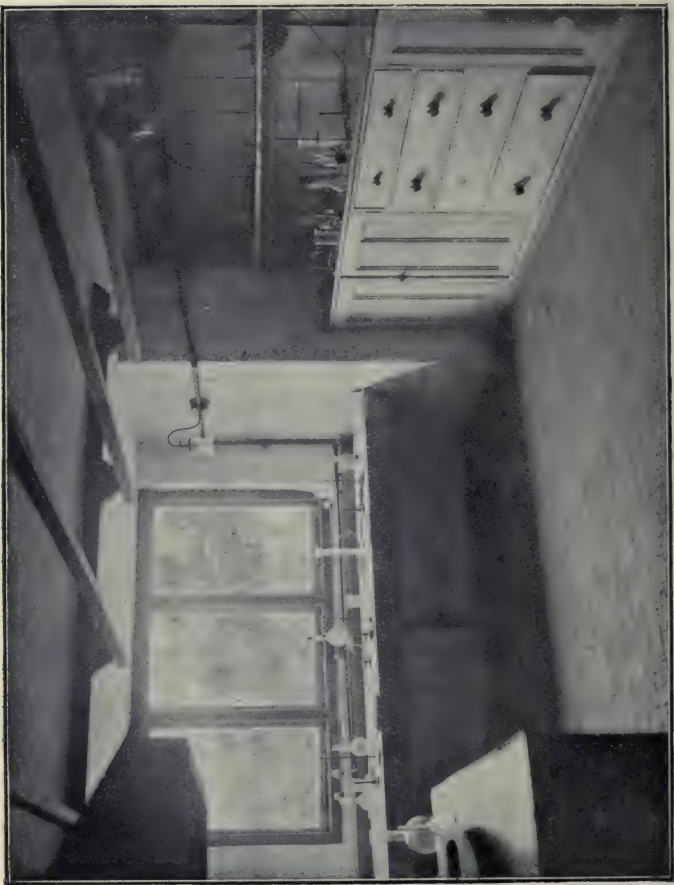
Whilst we laboured to win the interests and confidence of these girls, older workers, who ought to have known better, twitted them with being 'day school babies.' The stock argument, 'Why should we have to come to school when other girls don't?' took a year or so to answer. Then girls who had been with us long enough were more inclined to question, 'Why should we have all these advantages when other girls are denied them?' These and similar difficulties cannot arise in a new school, since all students will come

<sup>1</sup> This year (1919) a detailed individual report was sent to the parents of over 500 girls.



ELEMENTARY BIOLOGY

(GIRLS OF 14)



A SMALL LAUNDRY USED AS A LABORATORY



## DISCIPLINE

direct from primary schools with no lapse of supervision and all will be fourteen years of age. Nevertheless there will no doubt be considerable difficulty with discipline, especially with tactless and unwise teachers.

To be of any permanent value, discipline needs to be as little as possible imposed from without. Each pupil has to be persuaded to become her own disciplinarian—‘her own policeman.’

It is for this reason that I venture to think that teachers whose experience has been limited to primary schools are not suited, generally speaking, to this work. They are accustomed to large classes, and to maintain order in these, it is necessary to employ a somewhat repressive, coercive manner, and a mechanical comprehensive treatment not conducive to a free, happy development of individual character. They deal with quite young children, and even those who most studiously object to the repressive treatment may be inclined, I fancy, to adopt a somewhat patronising ‘other-plane’ manner (a higher, older plane) from which they ‘speak down’ to their pupils.

The young wage-earner of fourteen and fifteen looks very similar to girls in Standards VII and Ex-VII, but in reality she is passing through a very difficult and revolutionary period. External discipline has been removed at a time when she was less physically self-controlled than at any other age. She attains an extreme degree of freedom in her daily work. Her self-importance and self-dependence are increased by keen realisation of her economic independence and enhanced position as a bread-winner in the home. She is acutely sensitive to criticism of any kind, more especially if given before a witness; she resents correction and would probably rebel against domineering authority.

Many parents are entirely inadequate to deal with this difficult phase; some admit their impotence and leave the girl to go her own way; others make the equally fatal mistake of imposing such restrictions on her freedom of movement and choice of friends and recreation that they lose her confidence, estrange her sympathy and affections, until an atmosphere

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of alienation and hostility is produced, resulting either in deliberate deceit and lying on the part of the girl or her escape to more congenial surroundings. And yet if approached in the right way the same young person can be persuaded and influenced to almost any extent.

A very useful experiment was the holding of a parents' conference : 675 invitations were issued, 70 responding, and a most interesting discussion resulted. We should like to form a Parents' Association and hold regular meetings, so that some of these problems may be mutually discussed.<sup>1</sup> We want to make it more impossible for girls to say, ' It's no good talking to our mother, she doesn't understand.'

A sympathetic appreciation of the girl's changed mental outlook enables one to deal fairly satisfactorily with this difficult problem. It is wise to respect her sense of personal dignity, to appeal to that of responsibility, and enlist her co-operation. A girl who defies a mistress and refuses obedience can be induced to apologise before the class when she understands the need for discipline to be maintained, and has the suggestion put to her that she must have the courage to do right as well as the audacity to do wrong. A mere autocratic command to make this difficult amend would probably meet with a sullen, obstinate refusal. The girl adolescent has a keen sense of justice and usually a love of fair play. A little sound reasoning seldom fails in its appeal if given with sympathetic understanding. She will receive with manifest gratitude advice or admonition given in a private talk which, if administered before even one companion, would elicit insolence or sullen defiance. Sometimes, when all other appeals have failed to produce a change of spirit, a frank admission of one's inability to help or understand has broken down hostility and replaced it with friendship and co-operation.

It is well to realise early that confidence cannot be forced, and that the reserve so natural to young people about the age of sixteen must be treated with respect.

<sup>1</sup> This Association is now (1919) an accomplished fact, and the first study circle for discussing ' Child Training ' has been held.

## THE OLD GIRLS' ASSOCIATION

The Prefect System is attempted in the school. Each class votes for its own representative, who, of necessity, is about the same age and ability as her confrères. There was at first criticism and resentment rather than loyal co-operation. This is partly due to a misunderstanding of the office and its duties, and also to the fact that each group meets only once during the whole week, and it is some time before the Prefect knows even the names of her girls. Opportunities for delegating responsibility and granting small privileges are limited—when all attend for two half-days greater intimacy may lead to more confidence and the system may yet prove a success.

The greatest asset in the maintenance of discipline is the gradual growth of 'tone' in the school.

### SECTION VI.

#### *The Old Girls' Association.*

A changed attitude can also perhaps be traced to the influence of members of the Old Girls' Association who, having been through the school, pass on its best traditions to the younger people working beside them. The Association was started in 1915, and already (1919) numbers over 200. It is managed by a committee of girls and mistresses. A nominal subscription is paid annually, and anyone is eligible for membership who has ever attended the school.

The annual meeting is held the first Wednesday in October, and at this officers are elected for the ensuing year—a programme is discussed, and opportunity is given for voicing any special needs felt by members. One of their earliest activities was to form a Pierrette Troupe. Both the costumes chosen and the entertainment given were charming in their extreme simplicity and absence of the smallest suggestion of vulgarity or bad taste. So popular did this troupe become that the health of the girls was inclined to suffer from the heavy calls made upon them. They showed, too, just as much interest and enthusiasm in giving a delightful entertain-



## THE GIRLS' SCHOOL

ment to the present girls as in performing before audiences of wounded soldiers.

This year, in addition to the Rambling Club, Study Circles were formed for Botany, History, Dramatic Literature, Dancing, French Conversation, and Class Singing. Attendance is spasmodic. Indeed there is a strong inclination among all girls of this age to take up new ideas with much enthusiasm and to allow interest to evaporate as soon as something fresh presents itself.

This term a widespread demand has arisen in the school for the Girl Guide movement. Every effort to obtain officers among the leisured classes has failed, and the members of the staff find their school duties too exhausting to admit of this access of effort. I placed the difficulty before a special meeting of the O.G.A., and eight girls of nineteen and twenty years at once offered to try and qualify to act as officers. The shorter working hours now advocated by many trades and adopted at Bournville will give them more leisure, and there is every reason to hope that they will make a success of the venture. Every term there is some kind of social gathering for members of the O.G.A. In July this takes the form of a Garden Party, at which members meet the leaving girls and those who have reached the age of eighteen to take part in various out-door sports. To testify their appreciation of the interest taken in the Association by the staff, some of the old girls got up a charming entertainment last summer at which they gave a delightful rendering of Yeats's 'Land of Heart's Desire,' with excellent stage effects and most sympathetic interpretation.

In December the Association formed 'Entertainment and Refreshment' Sub-Committees which, for the first time, made all the arrangements for the Christmas Party. The evening was devoted to dancing, several girls for the first time bringing their 'best boys' with them. Good music from piano and violin, as well as generous and excellent refreshments, were provided. The committee responsible refused, however, to accept very warm congratulations, except with reservation, because no provision in the form of games had been made



## CORPORATE LIFE

for non-dancers. This defect they intend to remedy next time.

There is a very insistent demand for a School Magazine, and this we hope to start as soon as war restrictions disappear.

### SECTION VII.

#### *Corporate Life.*

In a school providing for some 700 places each meeting numbers about 100. An early visitor to the Institute remarked that it was not a school so much as a 'procession,' and for the first two years this was true, to some extent. It was necessary to provide opportunities for enabling larger numbers to meet and to familiarise all with the realisation that they belonged to a large body to which they owed loyalty and public spirit and to which they should be proud to belong. The assembly at the beginning has been a great help on a small scale.

Each July we have had a Speech Day, following the traditions of all large secondary schools. A report has been given of the year's work, interesting people have addressed the girls who, on their part, have given an entertainment embodying some aspects of the work done during the year.

During the Spring Term various classes give a demonstration of the gymnastics and dancing taught in the school, and to this large numbers bring their friends. The suffering caused by the War gave numerous opportunities for united effort. Socials were arranged for wives and mothers of men in the service, and concerts given to raise funds for the District Citizens' Committees.

Copper collections have been made in aid of philanthropic and relief societies. Lately a Sunshine Scheme has been inaugurated. Every class has a Sunshine Representative on the committee, and a weekly collection is made. Each girl is encouraged to report cases of illness and trouble, and gifts are sent from that class, of flowers, fruit, invalid food, and in certain cases, money, accompanied by a letter of sympathy. In this and other ways we hope to inculcate the spirit of the

## THE GIRLS' SCHOOL

Brotherhood of Man and to counteract the individualistic tendencies which seem common to all piece-workers in a peculiar degree. At Christmas the different stages (arranged according to age) have a party, which often takes the form of a fancy dress dance. To entertain the whole school it is necessary to invite about 200 at a time, as 700 would be unmanageable for games and dancing, even if the hall were spacious enough to hold them all.

The continuation schools of the future need their own buildings, which in the evenings can be turned into clubs. Ancient institutes, and disused, condemned school buildings are entirely unsuitable. We attempted to set apart one room in the evenings for study and silent reading, but no one took advantage of it. Such dull drab surroundings have little attraction for young girls (with their passion for light and beauty) when factory work is ended. One hopes that Local Education Authorities will have that insight, foresight, or vision which will make them build, not barn-like class-rooms, but bright spacious work-rooms—rooms, too, that can be thrown open to the air on fine days. The building must contain a hall of noble aspect and dimensions, a library, gymnasium, and domestic science rooms. Needless to say, it should be surrounded whenever possible by a pretty garden. Some of these schools will perhaps have a hostel attached, and all of them if possible will need a camp at the seaside or among the hills. Even during the War one of our staff took some sixteen girls to Wales, and apart from fares gave them a delightful week, with really good meals, at a cost of less than 16s. each. Surely no party of girls ever before had such a week of perfect unalloyed happiness! The illustrated 'Round Robin' giving me an account of each day's programme breathed utter joy in every line. Mr. Fisher's suggestion regarding camps is a stroke of genius.

Some of our girls have seized further opportunities of study by attending week-end summer schools in connection with the W.E.A. Two have lately been to a three-months' intensive course at an adult school hostel. We hope the day is not far distant when Women's Settlements will be established, at

## ADDENDA

which girls over eighteen can take a residential course of study after leaving the continuation schools.<sup>1</sup>

Women who intend taking up this work need to realise that the best fruits of their labours can never be garnered by them. They will ripen in the homes made by the girls in the future.

We have taken as our school motto the words 'Nil Sine Deo,' and it is the thought that in this great work we are striving to act as elder sisters to younger girls in the great family of the Universal Father, working together with Him, that enables us cheerfully to face all discouragement, to accept gratefully any sign of appreciation on the part of the girls, and to go forward in faith, certain that this is the one form of social work which, if undertaken on wise lines and in the right spirit, not only gives immense spiritual satisfaction to those engaged in it, but which in the end must make for the salvation of our people and the uplift of the world.

## ADDENDA

Since the above was written several changes have taken place. The school is now called 'The Bournville Girls' Day Continuation School,' and meets from 8.30 to 12.15 and from 1.30 to 5.15. The Institute knows us no more, for we have had lent temporarily a charming building, 'The Beeches,' situated in the Selly Oak Road on the outskirts of the Model Village and within fifteen minutes' walk of the factory and Midland Railway. Built originally by Mr. George Cadbury as a Country Home for weakly town children and tired Salvation Army workers, it has an ideal position surrounded by beautiful trees, garden, and orchards. Moreover, the Bournville Village Trust has presented to the L.E.A., on condition that the building is erected by 1922, a fine site in the centre of Bournville, and Messrs. Cadbury Brothers

<sup>1</sup> This year a former student has gained one of three scholarships presented by Messrs. Cadbury Bros. for one year at Ruskin College, Oxford.

## THE GIRLS' SCHOOL

have promised a substantial contribution towards the cost of a new school for boys and girls.

The local branches of the Co-operative Society have joined the scheme, so that there are now about 850 girls in attendance. All those under sixteen on September 1st this Session are required to attend a second half-day (making  $7\frac{1}{2}$  hours per week) and are paid for time lost from the factory. With a few exceptions, Swimming is taken, whilst in addition to English a choice is made from such subjects as Art, Metal Work, History, Geography, Nature Study, and Science. Girls over sixteen years who attend voluntarily (in addition to the compulsory morning attendance) can take Cookery, Home-dressmaking, or Theory of Housewifery.

Last Session several of the afternoon classes visited public buildings in the city, the Library, Natural History Museum, and the Showroom at the Gas Department being the most popular. Eloquent essays were written to prove that the time thus occupied was well spent.

Some initial experiments suggest that in future we may find that the Binet-Simon tests of intelligence, as revised by Stanford, may prove of great value in grading and may take the place eventually of yearly examinations.

*Numerous inquiries regarding Text Books have been received. A list of those found suitable in the Girls' School has been compiled and is given in Appendix II.*



# THE BOYS' SCHOOL



## A DAY CONTINUATION SCHOOL FOR BOYS

C. J. V. BEWS, B.Sc., A.R.C.S.

**I**N attempting to give some account of the management and working of what was probably the first recognised Day Continuation School in the country, a foreword with regard to its inception may not be out of place.

The school was the outcome of representations made by the directors of the well-known Bournville firm to the Birmingham Education Authority in the spring of 1913. Formerly it had been the custom of the firm to ask their employees to attend classes on two or three evenings per week until they attained the age of eighteen years. It was found that the full benefit of the instruction was not received owing to the physical condition of the young people after the exertions of a hard day in the factory. The firm, therefore, asked the Education Authority to provide suitable classes in the day-time for the instruction of their employees and arrangements were made for the attendance of about 200 boys and 400 girls.

The school was placed under the administrative charge of a head master, who also taught the boys' classes, whilst the girls were placed under a separate teaching staff. The boys who were chosen to attend were from sixteen to eighteen years of age and had been to evening classes for probably two sessions. Instruction in physical training was provided for by the loan of well-qualified teachers by the employers of the boys.

The first year of the school's existence was looked upon in the nature of an experiment, and on its success or failure depended the extension of the scheme. It became quite evident that a mistake had been made in choosing the older

## THE BOYS' SCHOOL

boys with whom to commence work of this nature. Whilst three or four classes were exceptionally good and profited very much indeed by the facilities offered, the majority greatly resented having, as they put it, to become schoolboys again. The disciplinary difficulty was not particularly pronounced, but it was exceedingly hard to obtain really good work from the pupils. However, the results of the first year's work were sufficiently encouraging to cause the originators of the scheme to proceed with its extension. Anticipating a large increase in numbers, it was evident that the accommodation in the building then used would be insufficient both for the boys and the girls, and it was decided to obtain other premises which, while still regarded as temporary, were fairly suitable for the boys' school. A building was found which, with somewhat extensive alterations, provided three class-rooms, a large room for physical training, changing room, staff-room, and all necessary conveniences, and on these premises the school has been conducted since September 1914. The building may be used for public meetings in the evenings and is used for religious purposes on Sundays. The class-rooms are rather small and somewhat inconvenient, accommodating a maximum of twenty-four pupils, whilst owing to the uses to which the building is put furniture had to be obtained which could readily be removed and stored so as to occupy little space.

In considering the staffing arrangements, the committee under whose management the school was placed took a high view of the type and qualifications of the men most suitable to carry on successfully work with the class of boys who would be attending the school. Fortunately candidates possessing these qualities were available, and a head assistant and two others, all of whom were graduates with secondary school experience, were appointed.

Owing to the War and the somewhat unexpected increase in the work of the school, the staffing has been carried on under great difficulty. The physical training classes were for three years mainly in charge of instructresses, and women have been added to the permanent teaching staff. With the help of part-



## STAFFING AND ORGANISATION

time teachers it has been possible to cope with the extra work brought about by the rapid growth of the school.

The introduction of women teachers was viewed at the time with some trepidation, but results have proved these fears to be groundless, the women having an excellent influence on boys of this type and age.

The members of the staff were expected to teach for about twenty hours per week, additional time being devoted to correction and other necessary duties. The number of actual teaching hours may seem small when compared with those obtaining in primary or secondary schools, but experience has shown that any addition to this number would impose undue strain on the teacher.

The boys attending the school are drawn naturally from homes of varied types. Many live in congested suburbs; a few come from the centre of the city; while others are from the best residential parts of the district. On entering the school the boys are graded partly on the results of a simple examination in English and Arithmetic, but partly also by the standard of attainment reached in the primary school, and by a consideration of other factors.

It has been urged by some visitors to the school that we are fortunate in the type of boy with which we have to deal. Such criticism might have been justified before the War, but during the last four years, owing to the scarcity of boy labour, there has been an influx of many who, under ordinary circumstances, would never have been employed by the Bournville firm. The method of grading outlined above is not absolutely satisfactory, and it has been necessary at the end of the session to re-classify the pupils much on the lines which obtain in an ordinary secondary school.

For several years the boys employed in offices were placed in special classes distinct from those for boys working in the manufacturing departments. This system has since been discontinued, and clerical workers are now placed in ordinary classes according to their ability. This has been of decided benefit to the school, and has cleared away what may be termed the class distinction which was very much in evidence.

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The school hours were fixed to suit the ordinary employment periods of the pupils. The morning session commences at 8.30 and closes at 12.15, while the afternoon period is from 1.45 to 5.30. There is a short opening ceremony for prayer and notices, &c.

### *Curriculum.*

The choice of subjects for the curriculum did not present any great difficulty. The limited time of attendance meant that only three or four subjects could be taken in addition to physical training. The temporary nature of the premises and the absence of workshop accommodation immediately excluded practical subjects. (This want has since been supplied.) As the type of education was to be as liberal as possible, English and Mathematics were made the basis of the instruction, and a four-year course planned. In the first two years the subjects taken were English, Mathematics, and Geography, whilst in the last two years History was substituted for Geography and Practical Geometry included in the Mathematics syllabus. Experience has shown that a rigid syllabus in the various subjects cannot be adhered to owing to the marked difference in the mental capabilities of the different classes. An example will make this clear. At the present time we have seven third-year classes with twenty to twenty-four boys in each class. The top class can do excellent work in English, History, and Mathematics, but they are far removed from the lowest class of the same year. The syllabus, therefore, has to be adapted according to the capability of the various grades, and to be made more and more practical in the descending order of the classes. In this connection it may be mentioned that students who have little mathematical ability have been found to do excellent work in practical geometry, and, what is more to the point, they take a keen interest in the work.

In Mathematics the work taken includes arithmetic, algebra, theoretical and practical geometry, the examples chosen being of as practical a nature as possible. In the teaching of this

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subject there is not the time, nor is it advisable, to follow the methods of the usual type of text-book on the subject, and it must be borne in mind that the object in view is not to prepare for examinations but to stimulate the interest of the student and to develop his mental faculties in the direction of clear and logical reasoning power.

The instruction in English has been arranged in order to teach the students to appreciate English literature, to read good books, and to write and converse well in their native tongue. Works by standard authors, including prose, poetry, and the drama, are read and studied, discussion on the characters and subject-matter being encouraged as much as possible. A well-selected library is of great assistance, as it is a matter of some difficulty to draw young people away from the badly written and badly printed, sensational and cheap papers which flood the shops of our newsagents at the present time.

Recently we have been able to obtain sets of books which the boys of a class are allowed to take home and read. This has been of great advantage, as it means that three or four books can be read each term, and it also saves much time which previously had to be devoted to reading in class. The authors read include Shakespeare, Goldsmith, Sheridan, Scott, Dickens, Macaulay, Haggard, Doyle, &c.

The syllabus and methods of teaching geography have been arranged to suit the capabilities of the various classes. With the first-year boys a broad outline of world geography is taken on a scientific and regional basis: with the second-year classes the Continent of Europe is studied in more detail. In the weaker classes the work is made more and more of a practical nature, and with very weak students the syllabus is based on the geography and history of the district in which the school is situated.

History is taught from the industrial and civic stand-points, and is particularly applied to modern social life and its problems. This has been found to arouse great interest amongst the boys, to draw them into discussion, and in every way to make the lessons much more attractive without losing anything of their educative value.



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Physical training is a valuable feature in the curriculum and is under the direction of highly qualified instructors. The boys always change completely, under supervision, for the lesson, thus giving an opportunity of noticing the cleanliness of the body, and of taking steps to remedy any defects in this matter which may be observed.

### *Voluntary Classes.*

In April 1917 the boys were offered the opportunity of attending school for a further period per week on the condition that they were prepared to sacrifice their wages for this time. About 30 per cent. of the students availed themselves of this offer and a more liberal choice of subjects was devised in order to arouse interest. It was found possible to arrange classes in Art Metalwork, Elementary Practical Science, and French. As this experiment proved such a decided success it has been continued and classes in Elementary Economics, Elementary Engineering subjects, and Art have been added. The practical subjects have proved to be a great attraction, particularly the Art Metalwork, in which the boys with little intellectual ability have exhibited considerable artistic skill. A somewhat singular feature of this scheme has been the manner in which boys who selected French as one of their subjects have continued the class, very few having evinced a desire to withdraw.

One of the results of this additional period is that it has been possible to form a Matriculation Class at the request of boys who wished to prepare for this examination. Successes have been obtained in both the Matriculation and Intermediate Science examinations, and one of our boys is now at the Birmingham University taking the course for a degree in science.

### *Discipline.*

This question is one that will no doubt be of great importance when Day Continuation Schools become general, and it is quite possible that it may act as a deterrent in attracting



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teachers to these schools. It may be emphasised that there seem to be no methods of punishment such as obtain in full-time primary or secondary schools. The maintenance of discipline will, therefore, depend on two factors, viz., the choice of suitable teachers and the co-operation between the employer and the school staff. Of these the first is infinitely the more important. The teacher must have a thorough knowledge of his subject, be able to illustrate it as practically as possible, and he must be prepared to work at the highest pressure. Discipline must be maintained by interest and personality rather than by severity, the latter leading only to unrest. A quiet talk with an unruly boy will generally lead to far better results than any amount of censure.

The co-operation of the employer and the school staff is very important, and has been found to be of great service in this school. The giving of rewards and the making of wage increases dependent to some extent on school progress both assist in modifying the attitude of boys towards attending the school.

Boys who have completed a three or four years' course at the school are eligible for a certificate, which is given only to those who have shown marked progress during their attendance.

A few words on our experiences since the opening of the school may not be out of place. At first the boys resented having to attend and exhibited marked hostility towards the staff, no doubt because the majority had left the primary school one or two years previously under the impression that their school days were over. Naturally we had a hard and, what at first seemed, a hopeless task in front of us. After four years' perseverance and hard work the attitude of the boys has quite changed ; hostility and resentment have vanished, and the school is obtaining a quite good tone. It has sometimes been necessary to suspend boys for very serious offences, but this happens only very occasionally.

As Day Continuation Schools are now springing up all over the country I wish to offer a few comments and suggestions with regard to their working.

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First one may ask, 'What is the aim and the object of the continuation school?' and on this point there is an extremely sharp difference of opinion. On the one side we have the vocationist who states that the object of the school should be to train better workers in the various industries, and that the work of the school should be centred round the trade in which they are engaged. On the other side we have the non-vocationist, whose opinion is that the schools should exist for the purpose of training the young for their future responsibilities as citizens, to broaden their outlook on life, and to develop their intelligence in order to obtain a more enlightened democracy. The supporters of the former view believe that the boy is more approachable through his trade, and that discipline and interest will be more readily obtained in this way. This may be true in a few cases, but we have to remember that, in the future, industry will consist more and more of dull and monotonous repetition work on which the great majority of young workers will be employed. The curriculum of the school in such a case should not centre round the boy's work but should rather take him away from it and find him new interests in life. I quite appreciate the fact that there should be special courses for those employed in certain skilled trades, but even in these cases the general education should not be neglected: in fact it should still be placed in the foreground. A far more intelligent worker is obtained in the latter case and one who is of much more service to his employers. Again we have to remember that the boy's working time is only a small fraction of his life, and that he has more leisure time than working time. Surely, then, we must make provision so that he should be able to employ his leisure hours to the best advantage. The recent movement towards a shorter working week adds weight to this argument.

It is evident that, owing to the scarcity of material and the necessity for more houses, new buildings for the Day Continuation Schools will, as a rule, be out of the question. Use must therefore be made of any existing buildings which will more or less satisfactorily answer the purpose. This will be a tremendous disadvantage to the school and one that has

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hardly been considered. We have to remember that the boys have received their early education in somewhat palatial buildings fully provided with all those things necessary for the carrying on of the work. To come from schools of this description to others providing inadequate accommodation, and in which everything proclaims its temporary nature, at once gives the boys a bad impression, and one which it is very difficult to remove. I have been told again and again by the boys that it is the building more than anything else which they object to. In housing these schools there seems to be prevalent an idea that any sort of building will do, and I should therefore like to emphasise the fact that the buildings will play a very important part in the success of the school.

In addition to being the place around which the education of the young is concentrated, the schools should also be the centre of the social activities of the boys. This is of supreme importance. We have to remember that, under the Act, the staff will meet with the boys only on two occasions each week, and will therefore have limited opportunities of getting to know them. If the school is made a sort of open house every evening of the week, with all the necessary arrangements for indoor games and amusements, library, reading-room, classes, &c., opportunities will be created for the staff to know their pupils and to influence them accordingly.

It has been urged that such an arrangement would throw too much work on the staff. This will be quite true if the staffing of the schools is carried out in a niggardly manner, but with generous treatment there is no necessity at all to give too much work to the staff. I cannot lay too great stress on this aspect of the work. It is largely through the social side of the school that the boys must be won. This, of course, applies to outdoor social activities—football, cricket, &c.—as well. The physical training staff should be of great assistance in this branch of the school, and should be able to organise many schemes of a recreative nature which will appeal to the boys.





PROBLEMS OF CLASS  
TEACHING



## PROBLEMS OF CLASS TEACHING IN A BOYS' DAY CONTINUATION SCHOOL

DOUGLAS M. NICHOLLS, M.A., LL.B.

THE management of a class in a Day Continuation School requires special consideration, since experience has shown that there are present certain difficulties which do not exist or are only found in a lesser degree in other types of schools.

Apart from the management of school subjects, which is really a matter for the individual teacher, there are certain general problems which affect all classes irrespective of the subject taught. These naturally divide themselves into two classes :

1. Problems arising from external influences.
2. Problems arising in the class itself.

### *Problems arising from External Influences.*

It is generally regarded as a truism that the success of a school depends largely upon the maintenance of an adequate and satisfactory system of discipline. This is undoubtedly true of a Day Continuation School, and it presents one of the chief problems facing this new system of education. Although Committees and Governors are partially justified in expecting a teacher to exert his own authority, it cannot be too clearly emphasised that in a continuation class external influences are often such as to render the most perfect disciplinarian powerless. The term 'discipline' is used here in its widest sense, not merely or even necessarily implying the maintenance of order, but rather the existence of a spirit of

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appreciation, industry, and attention on the part of each student.

To understand this problem of discipline the conditions under which the student comes to the class must be borne in mind. The student is more or less economically independent : the authority of his parents has begun to weaken : attendance is generally repugnant, and will probably continue to be so, until in the course of years the school has been able to build up a tradition and create an esprit de corps : ordinary sanctions for enforcing school discipline cannot be employed, and the teacher has therefore to depend entirely upon his own personality unsupported by disciplinary penalties. In such circumstances he may find his task hopeless if external influences are against him. A few examples will show this. Punctuality is a very large factor in the maintenance of any system of discipline, and will, of course, be enforced, but the attitude of an employer towards a school may make this very difficult and create a feeling of injustice in the minds of the students—a thing to be most carefully avoided. Inconvenient hours of work at the factory may render it very difficult for a student to be punctual ; the boy in consequence feels himself harshly treated, and his attitude towards his school becomes one of hostility. Again, since the student only attends the class for a few hours a week, he naturally tends to regard his industrial work as of more importance, and he is often much influenced by the opinions of his employer and older fellow-workers. If through want of thought or, possibly, even through open hostility to the school, his employer or foreman prejudices his mind by disparaging remarks concerning his school, the teacher will find him so indifferent or hostile as to render serious teaching impossible. Experience has proved how powerful an influence this is ; really good classes becoming practically unmanageable owing to unfortunate remarks or incidents in factory or workshop. The same effect is often produced by innovations in the factory routine which, owing to the existence of the school, cause inconvenience or hardships to the students. For example, the alteration of the hour of paying wages may make it difficult for the students



## PROBLEMS FROM EXTERNAL INFLUENCES

to obtain their money at a convenient time, with the consequence that the school falls into disfavour. These difficulties are not insurmountable, however, and will no doubt be happily provided for when it is realised that the interests of the employer and the teacher are identical; for although an employer or his representative may cause serious impediment to a teacher, the latter, if possessed of ability and strong personality, can be of great service or disservice to the former, by the nature of the influence he exerts over his pupils.

Akin to the state of mind in which a student attends the class is the condition of body. It is hardly reasonable to expect a boy, who has worked hard at manual labour from 6 A.M., or even only from 8 A.M., until 12.30, to attend school from 2 P.M. to 5.30 P.M., and to pay moderate attention to his instruction towards the end of the afternoon. Sleep will on some occasions actually claim its victims. Herein lies a problem which will require very serious consideration. Some favour attendance on two half-days a week for each student, but it may well be found wiser to eliminate altogether any industrial work on the day of attendance and substitute one whole day in place of the two halves.

From the teacher's point of view this problem can be briefly summarised thus. It is most important that the student should not be physically tired in any way, and, therefore, it is desirable that his day of attendance should be free from industrial work. This result can only be obtained by attendance on one whole day a week, for it would be unreasonable to expect employers to sanction two half-day holidays a week in addition to the two half-days spent at school. Unfortunately a whole day attendance has its disadvantages in two respects. Firstly, in order to conform to the requirements of the Act of 1918, when it is in full force, students will have to attend for eight hours per week, and there can be little doubt that teachers will agree that eight hours' instruction in one day places too great a strain upon the student. Secondly, it is necessary that the teacher and the student should come in contact with one another as frequently as possible, but attendance on one day only would

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restrict the opportunity of meeting in class to once a week. It is not easy to suggest any definite solution of this problem, but in practice it is to be hoped that much may be done to obviate these difficulties by the existence of a spirit of good will between factory and school, which will produce accommodating arrangements of hours of work, whenever possible.

Another difficulty arises owing to the changing needs of the factory, which may often appear to clash with the requirements of the school. The following is a case that may often occur. A boy attending on Monday is needed in the factory on that day. The head master is therefore requested to transfer him to a class on Tuesday. A few exceptional cases might be tolerated, but if such practice became recognised as legitimate, endless difficulties would confront the class-teacher. Transference unsettles a boy and breaks up the continuity of his work, for however carefully the classes are graded it has been found almost impossible to run two or three classes doing absolutely identical work at each weekly meeting. A boy who is transferred is therefore almost certain to find himself either behind or in front of the work of his new class, and this is apt to impress him with the idea that it really does not matter what work he does or how he does it, so long as he puts in time. Such an idea, of course, is certain to destroy the interest of a class.

### *Problems arising in the Class-room.*

Even inside the class-room there are conditions opposed to progress over which the teacher has no direct control.

The first in importance is the building itself. Although the need for adequate accommodation is generally recognised by educationists, it is specially necessary at the present time to lay stress upon the subject. The demand for, and the greatly increased cost of, building material are so great that Education Authorities may almost be pardoned for ignoring or overlooking so important a principle. Moreover, the Committee appointed by the Board of Education for the purpose of considering this very question, in its Report seems

## PROBLEMS ARISING IN THE CLASS-ROOM

to have been chiefly guided by the one idea of economy, and has in consequence published recommendations to Local Authorities suggesting accommodation in most cases totally inadequate. If this desire for economy at the expense of efficiency be persisted in the success of these new schools from the start will be problematical.

The class-room should be of adequate size, well heated and ventilated. Students coming from factories, especially in certain trades, are very sensitive to draughts and inadequate temperature. Moreover, the influence of environment is very powerful in a class-room of adolescents. A dull, sombre, and dispiriting surrounding, combined with bad ventilation or numbing cold and draughts, is certain to destroy the proper development of a student's desire for higher things. The natural corollary of this is that the room should be properly furnished and not overcrowded. Each student should enjoy the use of a separate desk, and, if possible, it should be so placed that there is sufficient space for a person to pass between it and adjacent desks on all sides. The practice which exists in some establishments (and actually recommended by the Committee of the Board of Education referred to above) of placing students in long rows across the room elbow to elbow is obviously very bad and seriously increases the difficulties of the teacher. Furthermore, the desks should be clamped to the floor or made incapable of easy movement, since students quite unintentionally often cause much noise and disturbance by drawing up their desks or pushing them into line. This is not so pronounced in an ordinary school, even when light desks are used ; but in a continuation school, where, at first, folding desks may be installed in order to suit the circumstances of a temporary building, it is and will be a distinct minor evil, and the reason is obvious.

It is unreasonable to expect the influence of factory environment to disappear entirely immediately a boy enters the class-room, or that a boy accustomed to the rattle of machinery in a factory should be *lively* aware of the inconvenience of unnecessary noise in a class-room. This is an important consideration to be carefully borne in mind by the teacher.



## PROBLEMS OF CLASS TEACHING

He will do well to realise this from the beginning, and endeavour to exercise patience and leniency in dealing with students who offend against school decorum by fidgeting, scraping of feet, and speaking loudly. To this advice might be added a suggestion that, since he will be dealing with a type of boy who is supercritical as far as the person of his teacher is concerned, he will find it wise to endeavour to control his own actions and attitude in strict accordance with the exhortations he addresses to his pupils, and especially to avoid all sudden or rapid change of mood. In fact *he* might well take for his motto : ' *Semper Idem.*'

In the matter of teaching, each teacher will have to employ such methods as are best suited to the particular subject taught ; and these he may only discover after much experience and experimenting, for the conditions will be abnormal. It is necessary, however, to arrive at some clear idea as to the general goal at which to aim, irrespective of the subject taught.

In preparing students for most examinations it is generally paramount to press into their heads a mass of rigid book knowledge, and undoubtedly the ordinary man in the street is only too apt to test the progress of a class by the amount of actual *facts* the students have *learnt* in the course of their study. It is hardly necessary to urge that the mere acquisition of academic knowledge is not the true aim of education, yet, since it is often the only *tangible* and *immediate* result a teacher can show for his labour, he is prone to exaggerate its importance and is encouraged to do so by the attitude of those to whom he is responsible. If, however, the mere acquisition of academic knowledge be made one of the primary aims of the new continuation schools—and recent evidence points to the fact that this is a real danger—disappointment will surely fall upon those who are anxious to promote them. It is fatal to attempt to impart knowledge in such schools by a rigid system of cut-and-dried class-teaching. The primary necessity is to create an atmosphere of inquiry and a spirit desiring higher culture ; and it is safe to say that when a teacher has succeeded in doing this, and has also indicated the best lines of individual study, he has largely completed



## PROBLEMS ARISING IN THE CLASS-ROOM

his work. The time is too short and the conditions are unfavourable to the practice of *intensive* education, even if it were desirable. The teacher should endeavour to follow the methods of *extensive* culture, and expect his labours to return to him a harvest *not* of exact detailed knowledge, but of the truer conceptions of life and a wider mental outlook.

In most cases it will probably be found impossible to give more than one hour a week to any particular subject, with the consequence that the teacher will best secure his object by dealing in a wide general way with his subject, so as to rouse the interest of his pupils and create in them a desire to gather the details for themselves. This is especially so in English literature.

To attempt to go closely through a book, carefully explaining all references and rigidly examining all peculiar constructions, idioms, and unusual words, is a method probably too advanced for juvenile students in any case, although frequently practised even with boys of twelve and thirteen years of age. To employ such a method in a continuation class, where the necessities of rigid examinations do not arise, is entirely mistaken, since it must inevitably destroy the 'human' interest aroused by the book. The aim rather should be to read the books of well-known authors as widely and as *naturally* as possible. If in the four years' course the students can be introduced to most of our leading writers—and it is important not to neglect our living authors—by actually reading in a general way some of their best books, and not merely being told things about them by the teacher in set lessons, they will learn to appreciate naturally what is good in literature, and will pick up unconsciously the rules of good style to assist them in writing respectable English.

Of course it is always wise not to push any method too far. The mere study of literature can never make a good writer unless opportunities are given for practice. There again it will be found best to allow the student to develop his own natural gifts by *self-expression* and, instead of set exercises in grammatical rules, &c., the production of essays or composition upon subjects arising out of the literature read will prove most

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efficient. In fact, experience has proved that in all literary subjects, at any rate in a continuation class, it is advisable to restrict written exercises almost entirely to the student's own self-expression. Dictated notes in literature and history should, therefore, as far as possible, be abolished and their place taken by compositions of the students' own efforts, in which they endeavour to summarise at the end of the lesson what they have been taught or have read. Even this should be improved upon by occasionally directing the students to write compositions upon subjects of interest to themselves, which have not been dealt with at all in class, thus throwing the students upon their own resources for material. The teacher must not expect too much, or feel dissatisfied with his students' weak attempts. One of the most serious defects of our modern methods of teaching which becomes apparent in a continuation class, is their tendency to encourage mental laziness, since the student looks to the teacher to help him through his mental exercises. A boy will in preference do any amount of mechanical writing rather than *think* for a few minutes, but it is obvious that any exercise in which a student can escape by the assistance of his teacher, the employment of his brains, is of little value. This defect is even more serious in the case of boys employed in factories. Their industrial work is largely routine and lacks mental stimulus, and they are prone to treat their school work as if it were the same. The necessity, therefore, is to supply the stimulus, for although often possessing good memories, continuation school students are generally entirely destitute of the power of connected thought.

Finally, it is most important to encourage the students by emphasising the importance and value of the subjects they take. Boys earning their own livings are keen utilitarians and are *not* quick to realise the value of many of the subjects taught in schools, since their outlook on life is unfortunately too closely restricted to their immediate practical necessities. Until they can grasp the true objects of their studies and appreciate their opportunities, attendance will always appear to them as futile or even repugnant. There again, however,

## PROBLEMS ARISING IN THE CLASS-ROOM

care must be taken *not* to overdo the thing. Students will frequently be found who are determined *not* to appreciate education, and will endeavour to excuse their insubordination by declaring that they do not see the use of this or that subject. Every attempt should be made to win them to a better state of mind, but no consideration should be shown to their plea. Any such excuse should be sternly suppressed or it will speedily run through the whole class. This is a problem which will perhaps only be found in a continuation school, but there it is likely to assume very serious proportions owing to the peculiar circumstances under which the students attend.

Class teaching in a continuation school is never easy. It is often sadly discouraging and generally exacting, but replete with interest and opportunities to an educational enthusiast who is given a fairly free hand. Committees controlling these new schools will have to allow a wide discretion to their teachers, and encourage experiments diverging far from the beaten track of orthodox methods.





LITERATURE AS  
MENTAL CULTURE



## LITERATURE AS MENTAL CULTURE

MISS G. BLADES, B.A.

LANGUAGE is more than the mere mechanism of thought. I dare almost say it is the thought itself, for indeed thought alone, if such exists, is but the embryo, whereas thought expressed is the child triumphantly brought to the birth. Abolish words, or word concepts, and then sit down to think ! You can't ! Besides it is our ability to speak that distinguishes us from the other creatures of the animal world ; all God's creatures may think in a silent way, but to us our language alone seems perfect. But how many people are unable to use it ! How inarticulate these boys are when they come to us ! They spend many hours of their day in silence, in silent lethargy almost, and when they come to school for a few odd hours a week they are very willing indeed that we should talk to them, whilst they remain mentally asleep. Ask *them* to talk and it is another matter. But that is what we must teach them, and I have here set out to show that this teaching involves a severe mental culture for them ; in learning to speak clearly and euphoniously, to weld together word and thought so that both become one, they are truly becoming educated ; they receive an army training of the greatest value and become captains of much more than the words themselves ; they are captains of the *souls* of the words. We have to teach them what to read, train their taste so that they pass by what is harmful and linger over what is good ; we have to teach them, when they have found what is good, to share it with others ; to read it aloud and make it live anew with the power of a cultured voice behind it ; above all we have to teach them to *understand*, and oh, that need is great !

## LITERATURE AS MENTAL CULTURE

Only visit the law courts for an hour or two, find how many can *understand*, much less *answer* a plain question, and you'll sit in sackcloth and ashes, you teachers of England! Find out how many Englishmen can write a letter—straight to the point for business, and meandering round the point in that ideal friendly way which was so charming in our old letter writers. How many? Watch some people who plod diligently through every word of a newspaper, and end only with a very hazy notion of its contents; ask who can find all that matters in *part* of a paper, or read an article in but a few minutes and yet tell his neighbour clearly all about it. Listen to the bore who in telling a story takes you round the maze with him; or to the inarticulate person who can give you but a few sentences of information when you want fifty. Read in the paper how many people in Birmingham alone have been unable to fill in correctly an application for a ration book; or who have been unable to use the latter intelligently; and then ask yourself if the power to use language doesn't mean more than language—a trained mind, as well as tongue. How many know when silence is the best speech of all?

These boys, our future citizens, and leaders of their fellows, how can they move a crowd save by *talking* to them? The man who talks does more for the *living* world than the writer; and if he writes too he can bequeath much to posterity. The father who talks well bequeaths inestimable gifts to his children, who may inherit his gift, or who will at least hear and imitate unconsciously their father's speech. In clubs, in committees, these boys will have to speak to their fellows; they become councillors, guardians, and still they need to talk. Our highest council is the House of Speech (of Parliament), for how can man make his thought known save by the word? Perhaps, too, there is something akin in the doctrine of the Logos—'And the Word was God,' the Divinity in man.

So much for the ideal. Now, how to attain? These boys, as I said before, are inarticulate, mute inglorious Miltons, and the one word embraces the other.

The first difficulty is that we cannot assume the mere



## THE AWAKENING OF INTEREST

mechanical ability to spell and write ; yet it must pass without definite correction in the sense of mere spelling and writing lessons ; neither can we in one short hour a week spare time to teach them formal grammar, nor should we if we had the time. It is only by free use of the language that they will gradually use it correctly. Surely if for foreign, highly inflected languages the direct method has passed muster, then with double assurance should it be used in teaching our mother tongue. Too long in the past England has wasted time in perfecting the part before imaging the whole. Children have been led through weary drudgery and have lived on the faith that the whole would come into view some day. In art, brush forms, however uninteresting, because they were neat, were the start ; no little picture was allowed, because undoubtedly it would have been a daub, and would not have been good in the eyes of the inspector ; in music, endless scales and exercises and no tunes ; in French, only verbs ; in English, only grammar ; and these, too, often were all ; the land of promise never was reached. But we have outgrown this in many things ; why not in all ? Why not follow Nature's method ? Think of the fruit tree ; how first it puts forth foliage, nothing but leaves, but then after pruning yields its fruit. Cannot the boy then make what seems to him a finished effort and finally have it pruned ? The painter sketches all his pictures before he gives detail to any part, and I truly believe that the real musician, like Abt Vogler, ' fancies his fabric quite ' ere he builds ; then why should not the mere ordinary master of his mother tongue use it incorrectly at first, if you call it so, until some day he can complete the details of his building. I say let him talk ; let him write ; as much and as freely as he will, but let it not offend our eyes any more than one of those apparently useless sketches of Turner in the Tate Gallery ; or any rough sketch of any artist. With boys such as these the mere formal procedure results in a cramping of their intelligence. They are wage-earners, some of them home-keepers ; and they think on many problems ; the thoughts of adolescence, the thoughts of youth, are long, long thoughts ; and if they must only write or speak as much as they can

## LITERATURE AS MENTAL CULTURE

write and speak correctly those thoughts must die for lack of expression. So I maintain that we must attempt much that seems too much ; give them debates ; let them discuss the problems of the day ; let them read the newspaper and try to understand it, and to make one another understand it ; let them write letters, draw up forms, fill in applications, make advertisements, write telegrams, sum up the meaning of a chapter read, talk about people they have met in books ; let them express themselves. This is a harder task for the teacher than to give long interesting lessons. The boys need judicious guidance and yet the teacher must seem to stand aside—a very hard thing for a typical teacher to do. They must learn self-control ; learn to organise their own class, their own debate ; learn to discuss, to argue, to appreciate the highest things in literature, and especially to read to one another ; it is only thus that they can learn the value of every word, that they will gradually discriminate between the stately diction of Macaulay and the racy freedom of Kipling, and know when to imitate each.

Some whose language is already fluent will need long ‘ pruning ’ exercises in the form of précis writing ; others who are more or less inarticulate need training in the elaboration of a plain sentence, as so ably illustrated by Professor Adams in ‘ Exposition and Illustration in Teaching ’ ; others, again, who have mechanical ability in the use of language, but whose power of understanding it is undeveloped, will need careful examples in paraphrase—oral for preference ; and this individual training can only be given when the class is a small one.

Then, again, they need to find pleasure in the intrinsic value of words in poetry, and for this some work in verse deserves detailed attention in class. They need to learn how to read and enjoy a prose book ; that can best be done at home ; and in class, after, let them read portions of books to one another ; let them talk of characters ; dissect plots if you will ; let them find what they enjoyed most.

But here are problems looming large, and threatening to efface our ‘ Châteaux en Espagne.’ There will always be some

## A SUGGESTED SCHEME OF WORK

who cannot, owing to home circumstances, and some who will not, read books at home. Again, these boys do not provide their own books, and there will be some who do not faithfully return books lent to them. There will be many books needed in school if the literature is to be sufficient and varied, and where are the funds? There will be some who will sit silent through a debate, or discussion, and thus seem to be gaining little; there will be some who cannot do the extra written work that such a scheme involves; there will be times when a teacher, listening to the meandering thoughts, the faulty grammar, and ill-modulated voices, will wonder if it be worth while; if ever they will talk properly, write well, keep to the point and appreciate the best. But I have found that after all much is done and little is wasted, if half of them read books, and half of them debate and discuss, and some few write notes at home; then the work is not wasted, and if classes are sufficiently small all can have that training which they most need.

For instance, these boys are able to debate in a truly interested way on such subjects as strikes, for are they not themselves workers, men who may strike? They like to feel that they can take a side on an up-to-date question, or report on the day's news. They are interested in a Channel Tunnel, especially in its relation to the next war! They will talk on the subject of the foreigner in England after the War; on the costs of our Colonies; on Empire and Free Trade; on Labour Movements, and on the return of the Jews to Palestine; and they will talk eloquently, feelingly, if not correctly.

They will read a book, or books, such as 'David Copperfield,' 'Rob Roy,' 'Westward Ho!' 'Tale of Two Cities,' and will have much to say about them—in their own way. They are willing to read selections, sorted out at home; willing to read little accounts of characters or plots, written at home; and glad to talk of current events.

Take, for example, a scheme of work for a term. Two or three novels are distributed for home reading; a long work in verse is read in class; short poems are occasionally read to the class; some compared in written work; two or three



## LITERATURE AS MENTAL CULTURE

debates take place; a few examples of précis writing and paraphrase are attempted; the subject-matter is often taken from the newspaper, which is also used for reports. Then at the end of the term the class come prepared to talk about their books. A number of papers are written on, say, 'A Tale of Two Cities'; and each involves thought on the work read, and ability to write these thoughts in coherent form. The state of France is told by Madame Defarge's knitting; Sydney Carton's wasted early life is shown in his last thought, 'It is a far, far better thing I do now than I have ever done.' The echoes of that little corner in Soho are shown as echoes of footsteps coming into the lives of Lucy and Darnay; Jerry Cruncher is the humour of the story; Mr. Lorry seems to be the thread holding the story together. Papers on such subjects as the above are read by the lads to each other, and this practical effort in thought and writing is not only valuable but enjoyable.

Thus though they come but a few short hours a week, and though perhaps but one of those hours can be spared for their English, we have to try and give them all these—debate, précis, paraphrase, literature reading; literary discussion; mere chatty talk of things of the day; examination of new words so surely creeping into our vocabulary; written composition, thoughts of their own on all sorts of subjects; and also the mere pleasure occasionally of having something good read to them by some one who really knows how to do it—all these, and in one hour each week, for three or four years. Some, we know, will gain very little indeed; some gain nothing; some gain very, very much. It is only then by the use of language, very bad use if you like, at first, that they will at last obtain that fineness of perception, that ability to go on educating themselves, which is, I believe, the highest mental culture.

Tasks in hours of insight willed  
May be through hours of gloom fulfilled.

Not till the hours of light return  
All we have built do we discern.

MATTHEW ARNOLD.



MATHEMATICS AND  
SCIENCE



## THE TEACHING OF MATHEMATICS AND SCIENCE IN A DAY CONTINUATION SCHOOL FOR BOYS

E. A. LEES, A.R.C.S.

### *Mathematics.*

THE place proper to mathematics in a boy's education no doubt varies greatly according to the ability and aims of the individual boy. In a continuation school with a four years' course the ability of the boy is the first consideration—the aims of the individual can be dealt with later.

Necessarily a boy's aptitude for mathematics will depend largely upon two factors :

(a) The training he has received in his previous school to develop his logical powers.

(b) The work upon which he is engaged.

Dealing with the first factor :—By far the greater proportion of boys attending a Day Continuation School will have received nothing further in the way of mathematical education than is given in the elementary council schools, where, no matter what good promise a boy shows in mathematics, the teacher, owing to the large number of pupils he has, cannot devote any time to helping him to more advanced work. A boy who is weak in this subject is in even a worse position, for the teacher cannot give the time required for individual tuition that is necessary for helping lame dogs over stiles and almost inevitably gives some rule of thumb method—which completely detracts from the first essentials of mathematics, i.e. logical reasoning—or the boy is relegated to a lower class, where he may do the same work as he did in the previous year.

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Considering the second factor :—Boys who commence to earn their living usually take up work of one of three classes :

- (1) Office work.
- (2) Unskilled work.
- (3) Work in engineering and other skilled occupations.

Boys who are doing the class of work mentioned in (1) and (3) will necessarily use mathematics to a greater or less extent in their work, but those in the second category will have no need for calculations as a general thing, and this class will give the greatest proportion of pupils for the continuation schools.

It seemed to me therefore, after I had been appointed to the Continuation School at Birmingham, that a scheme for mathematics must start with the knowledge a boy had when leaving the elementary school, and deal *generally* with the subject.

The pupils were divided into classes dependent upon their work, a detailed account of which the reader will find in another chapter of this work. Incidentally I may mention that no class had more than twenty-five pupils, so that the individual attention which is so essential could be given.

After consultation with the head master—and for his many good hints I am under a deep obligation—I made out a syllabus so that—

I. BOYS ENGAGED IN OFFICE WORK should have a commercial course of Arithmetic and Mathematics for three years ; in the fourth year they did not attend for this subject, the explanation for which has already been given in a previous chapter.

II. BOYS ENGAGED IN UNSKILLED WORK should have general Arithmetic for the first and second years and then Practical Mathematics and Practical Geometry.

III. PUPILS ENGAGED IN WORK OF AN ENGINEERING CHARACTER, who were few in number, were catered for by having special classes in Mathematics for apprentices, the Bournville firm permitting them to come on two separate afternoons a week : the class they attended was either Mathe-



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matics applied to sheet-metal work or Mathematics applied to general engineering.

It has recently been found possible to subdivide the work of this section in accordance with the natural bent of the pupils. Thus we now have (*a*) Classes with an Engineering *bias*, in addition to classes taking the general school course with either Woodwork or Metalwork—conveniently referred to as (*b*) and (*c*).

For the purpose of this chapter it is only necessary to deal here with (*a*). (The question of students taking Metalwork is referred to in a later chapter.) In Mathematics the work is rather more advanced than would be attempted by a class in the same year taking the general course (*b*) or (*c*); it is also correlated with the Applied Science as much as possible. (*See Science.*)

The teaching in Geometry follows the lines given below, but these classes very speedily reach a sufficiently high standard to admit of the introduction of Machine Drawing.

This subdivision has the great advantage that Class III (i.e. those boys engaged in engineering and allied trades) will in time become composed of pupils who have previously taken the course with an Engineering *bias*, and hence, when they become definitely apprenticed to a skilled trade, they will have a good knowledge of the necessary groundwork.

At the same time it must not be assumed that a course with an Engineering *bias* is in any sense a vocational training in Engineering.

The syllabuses are given in fair detail, but the reader must not suppose that every class in its own year worked completely through the course. Each syllabus was elastic and not rigid, so that, though the *best* class in each year was able to follow the suggested lines, the weaker classes were not: in consequence with the weaker sections more time had to be spent in dealing with certain parts of the work, and the treatment of various points had to be very much modified. Incidentally individual pupils, although in a weak class, were not infrequently below even that class standard—they had to be

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treated separately. To give an actual case:—One pupil could not find the area of the floor of a room having simple measurements, i.e. he could not multiply such numbers as 9 and 14 together: the result was that he was taught to draw lines 9 and 14 units long, and make a rectangle, then divide it into unit squares and so find the value of  $9 \times 14$ . After some practice in such work he was given some cubes of wood and with them he built up various rectangular solids, and then by counting the cubes found the volumes, and incidentally learned that the volume generally for cube, square prism, and rectangular prism was: length  $\times$  breadth  $\times$  height. This particular pupil was able eventually to manage fairly stiff questions in areas and volumes.

It is decidedly interesting to note that all the questions given in this chapter have been worked by the pupils during their course through the school, and it is the more so when one remembers that these pupils, in the majority of cases, have never done anything more difficult than ordinary arithmetic. Thus, although the continuation schools will get a number of weak students and a number of weak classes, yet the standard of growth of logical powers, as shown by the work possible in mathematics, will compare not unfavourably with that of many secondary schools, which possess the advantage of having the pupils for five or six days a week, while we can only expect them for one.

It must not be supposed that, because the detailed work is on the practical side, the training given was vocational.

The majority of pupils dealt with belonged to Class II, and the whole idea in the mathematical teaching was educational. At the same time it must be remembered that pupils earning their living do not desire a truly theoretical teaching: the work they do must be shown to have some bearing upon practical things, which they either use, see, or read about. Otherwise there is no interest, and that means a difficulty with regard to discipline as well as great reduction in the value accruing to the pupils themselves.

I. The syllabus for the commercial work was: Ratio and Proportion; Proportional Parts and Partnership;

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Percentage; Profit and Loss; Alligation; Chain Rule; Exchange; Approximation; Contracted Methods of Multiplication and Division; Logarithms; Graphs; Interest—simple and compound; Third, Tenth and Tenth Rule; Discount and Equation of Payments; Stocks; Metric System; Progressions and Series; Annuities; Problems treating of questions on Progress and Rest, Trains, &c. Certain parts of elementary Physics, e.g. Specific Gravity and Temperature, were also given to quicken the imagination besides developing the logical methods of stating in writing the various data given. Exception may be taken to placing the Metric System so far down in the syllabus, but this was done for two reasons:

(a) It was found that most boys had a fair working knowledge of the elementary metric methods of measuring.

(b) While holding strong views on the necessity for the adoption of the decimal systems of money, weight and measure, because of the obvious advantages: (1) the facility of computation which not only benefits the bankers and merchants, but above all others, the poor people in their purchase of goods in the retail market; (2) the advantage of being able to compete in foreign trade, using the same weights and measures as the rest of the world—yet since such a system has not been adopted by this country, I did not think it advisable to give undue prominence to it.

II. The work done in practical arithmetic by boys in unskilled occupations during the first and second years depended very largely upon the class.<sup>1</sup> It was found that most of them fought shy of a simple multiplication or division question in decimals, hence the metric system was dealt with in an elementary manner first, and at the same time simple questions involving the drawing and measuring of lines correct to  $\frac{1}{10}$  inch or centimetre were dealt with: within a week or so the estimation by the eye of  $\frac{1}{10}$  of  $\frac{1}{10}$  inch or centimetre was considered, giving the pupil an understanding of the second place of decimals. At the same time it was deduced that the limit of

<sup>1</sup> See chapter previously referred to.



## MATHEMATICS AND SCIENCE

accuracy was determinate upon (a) the boy, because of personal error; (b) the rule, because of its mechanical defects. Once having established the value of tenths and hundredths to a boy in this way, it was not difficult to go further and show that the decimal system was simply an extension of our usual way of writing numbers down, thus :

784.96      7 is placed in such a position that it indicates  
                  7 hundreds : similarly 8 stands for 8 tens or  
                  80, 4 meaning 4 units : 9, 9-tenths and 6, 6-  
                  hundredths.

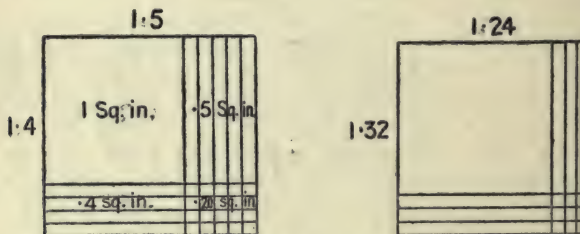
Simple addition and subtraction of decimals followed, practical questions being obtained by drawing lines of definite length in inches and centimetres, and adding or subtracting, the answers being checked by arithmetical work. With subtraction it was found better to use the 'shop' method.

$$\begin{array}{r}
 92.74 \\
 49.36 \\
 \hline
 43.38
 \end{array}
 \quad
 \text{Say } \frac{6}{100} \text{ and } \frac{8}{100} \text{ are } \frac{14}{100}$$

$$\begin{array}{r}
 3 \\
 10
 \end{array}
 \text{ " }
 \begin{array}{r}
 3 \\
 10
 \end{array}
 \text{ " }
 \begin{array}{r}
 6 \\
 10
 \end{array}$$

9 units and 3 units are 12 units  
 4 tens and 4 tens are 8 tens.

Multiplication involving decimals followed : this was at first treated by taking rectangles and in reality finding the areas thus :



By simple drawing to scale, which the pupils were soon able to do, it was quite easy to work to 100ths in the lines : following this method it was not difficult for the pupils to see why  $.5 \times .5 = .25$ , &c. Powers of the second order thus



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could be introduced ; at the same time it was insisted upon that a rough or approximate answer must *first* be obtained, so that it could be clearly seen by the pupil himself that  $71.84 \times 6.72$  must be of the order of 400 and *not* of 4000. It followed from the above diagrammatic methods that units  $\times$  tenths gave tenths, &c., so that there was no difficulty about fixing the decimal point of the product.

Division followed as the converse of multiplication, and if a rough answer were insisted upon, there was no difficulty as regards the final answer—square root naturally followed.

Questions on elementary mensuration were next dealt with—areas first, sheets of metal of various sorts being used and measurements made by the pupils themselves ; then volumes dealing with actual models of wood and metal and finally weights. Specific gravity was not introduced as such, but was brought in as 1 cubic inch of iron weighs .26 lb., &c.

Simple fractions were then taken : in many cases it really amounted to revision. Time, however, was not devoted to complicated fractions, the most difficult being the simplification of, say :

$$\frac{\frac{2}{3} - \frac{1}{7} \text{ of } 3\frac{1}{2}}{\frac{2}{3} \text{ of } 3\frac{1}{2} - \frac{1}{4}}$$

Questions involving ratio and proportion followed, then variation, stress being laid upon practical questions.

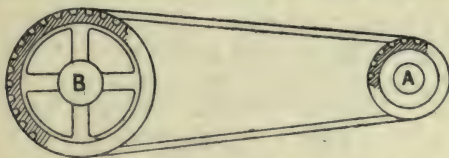


Diagram shows the toothed wheels of a cycle, connected by the chain.

Then 
$$\frac{\text{Number of revolutions of A}}{\text{Number of revolutions of B}} = \text{Velocity ratio.}$$

I.e. 
$$\frac{\text{Number of teeth on B}}{\text{Number of teeth on A}} = \text{Velocity ratio:}$$

## MATHEMATICS AND SCIENCE

This question introduced the pupil to finding the 'gear of a cycle,' the working of a 'three-speed gear,' and the value of a 'chain drive'—all points of interest to the average boy. Many boys, apparently totally unmathematical, could explain that the use of chain-driving eliminated 'slip' and that efficiency was high: that chain drives occupy little space and give efficient service at centre distances too short for belts and too long for gearing.

Similarly with regard to variation: the pupils have found from previous work that the volume of a rectangular prism depends upon its length, breadth and height—he has really done it by considering unit cubes: he now sees that  $V \propto h$ ,  $V \propto l$ ,  $V \propto b$ . Whenever possible this was further brought out by elementary graphs. Miscellaneous problems dealing with train questions, currents, &c., were next introduced, and finally such questions as involved Partnership, Profit and Loss, Percentage, and Simple Interest.

In the third and fourth years the mathematical teaching consisted of Practical Mathematics and Geometry.

Consider first the Practical Mathematics done by the unskilled boy. More advanced work in mensuration than had been dealt with in the two previous years was first taken. This involved (1) more frequent use of approximate answers as a preliminary to the obtaining of the 'exact' answer at this stage, therefore contracted methods of multiplication and division were introduced; (2) the more frequent use of letters to stand for quantities, whose values were known or required—thus bringing out the accurate generalisation which is among the essential characteristics of educated thought. Equations and problems followed naturally. Logarithms were then taught, care being taken not to obscure the issue by considering such cases as 'a<sup>n</sup>.' The pupils understood what 2<sup>2</sup>, 3<sup>3</sup>, 5<sup>2</sup>, meant—each having significance from their mensuration work: in consequence this was the starting point. Logarithms were then defined and the utility of the base shown. It was quite clear to the pupils that

$$10^1 \times 10^2 = 10 \times 100 = 1000 : \text{ was also } 10^1 + 2 = 10^3.$$

$$\text{Similarly} \quad \frac{10^3}{10^1} = \frac{1000}{10} = 100 : \text{ was also } 10^3 - 1 = 10^2.$$

## MATHEMATICS

Dealing with numbers not exact powers of 10, the following method was adopted.

78·43 was greater than 10, but less than 100—hence its logarithm was greater than 1 but less than 2. It was found convenient to work at first from the standpoint that such a number was  $7\cdot843 \times 10$ , hence the logarithm was the logarithm  $7\cdot843 + \log 10$ ; the  $\log 7\cdot843$  was obtained from the tables and then  $\log 10$ , i.e. 1, prefixed—this method of ‘standard form’ was easily adaptable for any number, e.g.  $\cdot0847 = 8\cdot47 \div 100$ —hence  $\log \cdot0847 = \log 8\cdot47 - \log 100$ , which brings in the negative characteristic. The tables of ‘anti-logarithms’ were used to reverse the process, but it was first shown by examples that the tables of logs could be used both for :

(1) Finding the log of a number.

(2) Finding a number of which one knew the logarithm.

Problems on mensuration—logarithms being used—were then taken, and also such questions of evaluation and formulæ as :

$$\begin{aligned} \text{H.P. of steam engine} &= \frac{\text{PLAN}}{33000} \\ \text{H.P. of turbine} &= \frac{\frac{W}{64} (V_1^2 - V_2^2)}{33000} \end{aligned}$$

These questions caused the pupils to desire information on the relative value of a steam-engine and a steam-turbine—the second formula of course applies to a water-turbine—and in consequence the interest of the class was kept alive and the mathematics of the calculation was thus shown to have a very practical application.

The use of the slide rule was now taken and compound interest problems with harder questions on variation, &c., followed.

Graphs followed, up to the standard of finding the equation of a straight line or, to put it practically, to find the law which seems to connect two quantities one of which depends upon another, their various values being obtained by experiment. Here is an example: ‘The following values were obtained in

## MATHEMATICS AND SCIENCE

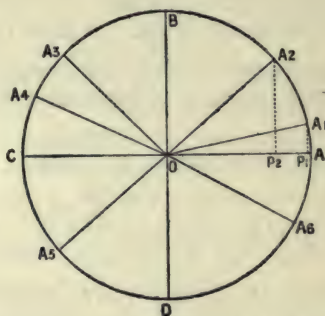
an experiment showing the head of water  $H$  in feet and the resulting pressure  $P$  in lbs. per sq. in.

|     |   |   |      |      |      |      |
|-----|---|---|------|------|------|------|
| $H$ | . | . | 1.13 | 2.24 | 3.37 | 4.53 |
| $P$ | . | . | 0.49 | 0.96 | 1.45 | 1.97 |

Draw a graph showing the relation between  $H$  and  $P$  and find the law connecting  $H$  and  $P$ .'

A little work on Trigonometrical ratios completed the syllabus (see Geometry).

In commencing Practical Geometry with students of this type the first step was, necessarily, to get them to draw a *good* line of *definite* length, then to use a protractor, compasses, and set squares. Much of this work was most conveniently done by considering a line rotating about one end from its initial position.



Its various positions are indicated by  $OA$ ,  $OA_1$ ,  $OB$ , &c. The line  $OA$  had to be drawn between two definite points  $O$  and  $A$ , a definite distance apart, say  $1\frac{1}{2}$  in. A position such as  $OA_1$  was then drawn and the *amount* of rotation or angle was measured by means of a protractor: similarly for angles  $AOA_2$  and  $A_2OB$ : these results were then added and tested by measuring angle  $AOB = 90^\circ$  or 1 right angle, &c.

From this one diagram it was possible to deduce:

- (1) A definition of an angle.
- (2) A definition and value of a right angle.
- (3) A definition and value of a straight angle.
- (4) Value of complementary angles.
- (5) Value of supplementary angles.



## MATHEMATICS

(6) The locus of A as it moves, always at the same distance from O, was the circumference of a circle with O as centre and OA as radius.

(7) If perpendiculars were drawn from  $A_1$ ,  $A_2$ , &c., on to OA, and their lengths measured, then  $A_1P_1$ ,  $A_2P_2$  did not increase *to the same extent* or *in the same ratio* as the angle increased. With most of the classes this exercise was sufficient, but where not so, a similar diagram with some of the points of a mariner's compass was taken.

The syllabus then proceeded thus : Bisection of lines and angles, construction of lines at right angles to other lines and parallel to other lines ; construction of simple figures, e.g. equilateral, isosceles and scalene triangles, square, rectangle, parallelogram ; proofs by measurements that (1) sum of angles of a triangle =  $180^\circ$  ; (2) angles of an equilateral triangle are equal ; (3) angles at base of isosceles triangle are equal ; (3a) by deduction, external angles at base of isosceles triangle are equal ; (4) area of parallelogram = base  $\times$  height ;

(5) area of triangle =  $\frac{\text{base} \times \text{height}}{2}$  ; and further work gave

us areas of quadrilateral, trapezium, &c., while the use of parallels gave us a method of reduction of, say, a pentagon to a triangle of equivalent area.

Drawings were made of quadrilaterals and irregular polygons, with measurements of the angles of the figures, from which result the pupils deduced that the sum of angles of the figure + 4 right angles = twice as many right angles as the figure has sides. Hence we obtained a method of constructing a regular pentagon, hexagon, &c. ;

$$\begin{aligned} \text{e.g. angle of regular pentagon} &= \frac{2 \times 5 - 4 \text{ right angles}}{5} \\ &= 1\frac{1}{5} = 108^\circ \end{aligned}$$

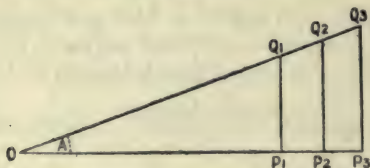
Problems followed on the construction of triangles and quadrilaterals, given certain data. Simple scales were then taken and afterwards diagonal scales. At the same time the class considered similar triangles, the pupils themselves measuring the corresponding sides, and hence deducing the

## MATHEMATICS AND SCIENCE

values of various lengths on a diagonal scale. Simple problems on scale drawing were then considered, and when possible actual problems of the height of a spire or the width of a road were obtained by the use of a simple theodolite. Field questions also came in, and the areas were obtained by measurement from the drawings to scale on squared paper, and by calculation.

Work on Pythagoras' Theorem and associated questions led up to the geometrical method of finding square roots ; circles, their angular properties and tangency, were next dealt with ; and then followed problems requiring constructions which necessitated a knowledge of the facts deduced.

Trigonometrical ratios were obtained by drawing right-angled triangles and the values of  $\frac{\text{base}}{\text{hypotenuse}}$ , &c., for several triangles with same angles obtained thus :—



This work was correlated with the Practical Mathematics. If time permitted, we took more advanced work on loci, leading to the ellipse, and then plans and elevations of simple solids followed.

III. The work for students apprenticed to skilled trades was both educational and vocational, the type of study depending upon whether the pupils were in the general engineering or sheet metal shops, but in either case the earlier part of the course comprised : approximations, logarithms, slide rule, and evaluation of formulæ.

After the first three years it was found possible to modify the syllabus of the first and second years in Mathematics so that more algebra was taken and less arithmetic. This was due, to a great extent, to the fact that we then obtained the pupils immediately on their leaving the elementary schools, so that there was no break in the continuity of teaching—hence not so much revision was required. The geometry work has

## SCIENCE

also been added to, so that we now take plans and elevations of simple solids much earlier, and sections of solids made by planes can be introduced, also simple machine drawing. This gives us quite good work without detracting from the logical training of which mathematics is so capable.

I must not omit to mention that we now have one class—a voluntary one—which takes either art or practical metal work for half the time and geometric design for the remaining one and a half hours. This work, though only recently started, shows good promise, and much elementary deductive reasoning is obtained before the necessary constructions for design can be carried out.

### *Science.*

The Science teaching was greatly handicapped for the first two or three years by our having no room definitely set apart for such work. However, general elementary physics and mechanics were given, the pupils themselves performing the experiments wherever possible. In this work it was shown that it was useless to weigh correctly to 1 in 1000 unless all other quantities obtained experimentally could be determined to the same degree of accuracy.

In the first instance the classes taking science consisted of pupils who were below educational 'par' and who did not take the practical arithmetic, so that a considerable amount of the work was necessarily of a very elementary nature and the mathematics was taken in conjunction with the science.

The following work was attempted: Densities by means of s.g. bottle, flotation and hydrometers, together with discussion of forces, centre of gravity, &c. This involved graduated deductive reasoning and some calculations. Fluid pressure was approached not from the barometer but from pressure gauges which most pupils had seen used. Questions such as: 'What forces have to be considered before the necessary strength of the casing of a submarine can be determined?' or 'A hoarding is placed in an exposed position: what force or forces determine the strength of the uprights, &c.?' brought out pressure very well, and it was not difficult to arrange apparatus illustrating: (1) That pressure of water depended



## MATHEMATICS AND SCIENCE

on depth ; (2) That pressure of water depended on area considered. Then came work on the barometer and Boyle's Law.

A more exhaustive treatment of forces followed : parallelogram of forces, forces which produce rotation, &c., leading up to simple machines.

During the last two years or so we have been fortunate in obtaining the use of a room which has been fitted up as a laboratory, where work in Science can be carried out much more effectually than formerly, and we are now able to take Elementary Chemistry in addition to Physics. At frequent intervals the whole or part of the time devoted to Science has been given up to questions. The pupils have asked any questions they have cared to with regard to Science and its application to industry. This has been eminently successful, as it has caused the boys to notice things for themselves, so that they may bring their difficulties to the class meeting, and the result has been that very interesting discussions have taken place. Before very long I hope to extend this side of the Science teaching and devote a lesson time periodically, say, once a month, to considering the making of models (e.g. steam-engine) and the difficulties encountered. This, of course, will be taken with the pupils attending Mechanics.

The recent subdivision towards a bias, mentioned previously, has made it possible for us to develop the Science side very considerably. In addition to the elementary work outlined we now aim at, and in the more advanced classes reach work dealing with : Stress, strain, strength of beams, riveted joints, mechanical advantage, friction, hydraulics, &c.

It is interesting to note that in 1919 four of our students passed the London Matriculation Examination, and these youths are now preparing for the Intermediate Science Examination of the same University, three of them taking Engineering. Their practical science work is being performed in the temporary school laboratory.

The school has already to its credit two successes in the Birmingham Intermediate Science Examination, the students who passed having carried out most of the necessary work in Chemistry and Physics with the simple equipment of this same laboratory.



PHYSICAL TRAINING  
FOR GIRLS







TYPE OF GYMNASTIC COSTUME ADVOCATED IN THIS CHAPTER

THE LEFT-HAND ILLUSTRATION ALSO SHOWS BEAM SADDLE IN USE



## PHYSICAL TRAINING IN A GIRLS' DAY CONTINUATION SCHOOL

MISS A. D. STEVENSON (*Senior Physical Training  
Mistress, Bournville Works*)

THE proper teaching of Educational Gymnastics in the new Day Continuation Schools will do wonders for the general health of the nation. It has done wonders for Bournville girls. When I say 'wonders' I mean not only physically, but mentally and morally also. Mentally it makes them quick thinking and alert. It also develops concentration, without which no advanced mental work is accomplished; in Swedish gymnastics a pupil must concentrate or mistakes are made. Of course, in musical drill the music starts and so do the pupils: they continue until either the music stops or plays another tune, and meanwhile the pupils may think about anything and the movements are quite mechanical.

Morally it develops courage or pluck. The girls are often made to do daring things, and, though sometimes a little frightened, scorn to let their gymnastic mistress or their fellow pupils know this. It also develops control or discipline: the pupils are subject to the discipline of the teacher and they gradually learn to discipline or control themselves. Again gymnastics develop public spirit. This is really unselfishness, because a girl has to sink her own personal feelings for the sake of the class. If she talks or in any way does not do her best then the whole class suffers. Just one word by way of proving what I have said. At Bournville, where games, gymnastics and dancing have been taught since 1899, a large percentage of the girls who have gone in for the voluntary

## PHYSICAL TRAINING FOR GIRLS

classes and games, in addition to their compulsory work, have risen to responsible positions in the factory. This speaks loudly for itself.

One word about how gymnastics develop the body physically. The goal at which we are aiming is health, not physical strength: the latter is quite secondary. I once heard someone remark, 'You Swedish gymnasts are not a bit muscularly strong, but you always look healthy, straight, and supple.' He knew nothing of gymnastics and their aim: he is a classical master in a big school, but he hit the nail on the head. Health, a good carriage, and control are aimed at physically.

I think that gymnastics are specially good for girls who are working in factories, because the bad effect of the work on their bodies is counteracted in the gymnastic class; muscles that are too much contracted at work are stretched in the gymnastic class, and vice versa. Girls who sit for hours at machines, bending over doing one process, week after week, are saved by attending gymnastics from getting contracted chests and stooping positions. There is not time here to say more about the effects gymnastics have on the body, but volumes could be, and have been, written relating how gymnastics affect the respiration, circulation, digestion and the general nutrition of the body and bodily functions.

It would be a fine thing for the nation if all factory workers were compelled to attend one gymnastics class a week. A healthy body is the forerunner of a healthy mind and active brain, and these again are the forerunners of good and useful work. Messrs. Cadbury Brothers have fully realised this, and the pioneer work which has been done by them is the beginning of great things in connection with the educational gymnastics in the continuation schools. The experiment was started in 1899, and has proved itself a success. How often one hears it remarked that the Bournville girls look healthy, happy and upright. This again speaks for itself.

It will perhaps be noticed that I used the term 'Educational Gymnastics' instead of 'Physical Training.' The former implies so much more accurately what is meant

## GYMNASTIC EQUIPMENT

than the latter. The latter implies the training of the body only, whereas 'Educational Gymnastics' implies all the three types of training that I have mentioned earlier.

It is to be sincerely hoped that the Education Authorities will employ gymnastic specialists in the new Day Continuation Schools. A specialist is needed here as much as, or even more than, in the other school work. The girls will be more advanced than the elementary school type, and at an age when they are more difficult to handle; they are wage-earners, and are beginning to feel very independent. The elementary school teacher who teaches gymnastics under the supervision of a specialist is doing good and useful work, but this type of teacher will not do for continuation school work. The standard will be much higher than that of the elementary schools, and no one but a specialist could do the work successfully.

A few words about the gymnasium apparatus and the gymnastic costume. Firstly, the gymnasium. Ideally speaking this should not be directly attached to the school building, but should be a building apart, with a covered way so that the girls can have access to it without being exposed to the weather.

The advantage of this is that there is less temptation to use it for a general assembly or meeting-room. A gymnasium should be a gymnasium and nothing else; also there is no chance of disturbing other classes when the time for games comes. No gymnastic class is complete unless a lively game is included, and if the gymnastic mistress has to continually tell the girls not to make a noise, the game is like a bottle of ginger beer which has lost its 'fizz.' The changing room should be at the front of the gymnasium, so that the girls need not walk through in their outdoor shoes. No one should be allowed in a gymnasium unless he or she has gymnastic shoes on. It should be large and airy, with the light coming from above or from high-up windows. Large windows at the ends should be avoided, as they dazzle the eyes of the pupils when jumping or vaulting. Wall bars should be the whole length of the gymnasium on both sides, so that the whole class can work together.



## PHYSICAL TRAINING FOR GIRLS

Besides wall bars, the apparatus should consist of a double beam, or boom, as it is often called. The most satisfactory type of beam is that which moves up and down like a window sash, the beams being weighted: this avoids accidents and saves energy. A jumping stand is essential, also forms with strong iron hooks on one end, and reversible, so that they can be used for balance walking. I should recommend beam saddles in preference to a vaulting horse. These are made to fit the beam and can be used at various heights to suit the standard of the class. They cost about one-quarter the money and are really better for beginners. A vaulting buck is a splendid thing for all classes, beginners and advanced pupils. It is like a very short vaulting horse with no pommels. I have always found this popular among my pupils.

There should be at least twelve climbing ropes, so that half the class can work at the same time. Rope-climbing is one of the best exercises for training the heart, and in short classes it is impossible to include rope-climbing in a lesson unless half the class can work at the same time: otherwise it would take too long.

The floor should be washed over twice a year with an oil and varnish preparation, which prevents it from getting slippery. It is *most* important that the gymnasium, and especially the floor, should be kept scrupulously clean, so that the danger of breathing dust is avoided. In order to further ensure this, the floor should be swabbed with a wet cloth before every class: this can be done by the pupils themselves in a few minutes if a suitable swab is provided. Niels Larsen are the only firm I know who provide these swabs. (They also keep the varnish and oil preparation.) The swabs consist of a large piece of woolly material, 1 yard across and  $1\frac{1}{2}$  yards in length, with a stick run through a slot which keeps the material straight. A rope is attached to this, and when the swab is thoroughly wet, the girls quickly run with it up and down the room; it takes about two minutes. The swabs should be placed in a tank of water each time after use.

Near the changing-room should be fitted a number of spray baths, and the girls should be encouraged to use these after



## GYMNASTIC COSTUMES

the class, before changing into their ordinary clothes. When the girls get used to this they will enjoy it and it will be done in quite a short time.

One might think, perhaps, that all this is a little out of the reach of the Education Authorities, but surely not, if they would realise the national importance of efficient gymnastics, and the work cannot be efficient unless equipped efficiently. The above suggestions are carried out in most schools in Denmark, because there the Education Authorities give gymnastics their right place in the curriculum. They do not look upon the gymnastics class as merely half-an-hour's relaxation from the real work, as it is only too often looked upon in England. How has this affected Denmark? As a nation the Danes are stronger, healthier, and straighter than we English are. I think gymnastics are largely responsible for this.

A few words upon the gymnastic costume. The costume now used in most schools and factories consists of the old-fashioned tunic and girdle, jersey and knickers. These have a neat appearance but they are by no means ideal. The ideal garment is a jersey made of thin woven wool, tightly fitting, with a round low neck, buttoned on the shoulders, and a divided skirt; the latter has the appearance of a short skirt and should be worn well above the knees. Both jersey and skirt should be navy blue. This costume is much simpler than the tunic type, and when once a satisfactory pattern has been obtained, it will be much more economical than the gymnastic tunic now in use in England. The jersey and divided skirts are universally used in Scandinavia, which is the fountain-head of scientific gymnastics. The tunic type of costume was introduced into England when Swedish gymnastics were first introduced; because it was thought that the English mind was as yet too prudish to tolerate the divided skirt! But surely in these days of enlightenment such nonsense is a thing of the past. It is to be hoped that all continuation schools beginning gymnastics will institute straight away this sensible type of gymnastic costume. It has everything to recommend it—economy, because there are

## PHYSICAL TRAINING FOR GIRLS

fewer garments (two instead of four); it is more quickly changed; and the movements can be seen much better in a tightly fitting jersey than in a tunic which hangs straight down. This type of costume is certainly not the one that is used in Bournville, the reason for this being that when gymnastic classes were first started here, the jersey and divided skirt type was looked upon as an impossibility for English girls, and large stocks of the other kind were purchased. Nevertheless I strongly recommend firms who are starting this work to institute the jersey and divided skirt if they wish to be up-to-date and at the same time economical. It is advisable for the firm or Education Authority to purchase the costumes and keep them clean and in repair. This has been done by Messrs. Cadbury Brothers, and consequently the classes always look neat and clean. If the girls are allowed to purchase their own, without any sort of restriction, then uniformity and, occasionally, cleanliness will disappear.

The Government are at last realising the superiority of the Swedish over the German or so-called British system: the former is based on a sound scientific basis, and it is to be sincerely hoped that this system will be adopted in every continuation school in the country.

In addition to the gymnastics at the continuation school the Bournville girls can attend voluntary gymnastic classes in the evenings, held in the works gymnasium. Various organised games are also played, such as hockey, tennis, netball and cricket, all being under the guidance of the physical training staff. The games are organised by an athletic club to which the girls pay an annual subscription.

Both games and gymnastics have a great educational influence on the girls; they make them healthier and more self-reliant, and arm them against that little demon inertia! This is proved by the fact that—as stated above—a large percentage of girls who have taken up this work wholeheartedly have risen to responsible positions in the works.

Swimming is also included in the curriculum of the Bournville Continuation School. Its practice inculcates the love of cleanliness, and develops courage, self-reliance and en-

## SWIMMING AND LIFE SAVING

durance. The educational value of swimming for growing and adolescent girls cannot be overestimated. The girls are taught in classes of about twenty-five; there are three mistresses to each class, and the class is divided into three sections :—(1) beginners; (2) those who can swim a little; (3) deep end people, who can dive, &c.

When the compulsory period is over a large percentage of girls take up swimming voluntarily, and it has been estimated that over 3000 girls have been taught to swim in Bournville, and about 500 have passed the Bronze Medal Examination of the Royal Life Saving Society.

All the girls in the school who are under sixteen undergo an examination in order to see if their backs are straight. Any curvature is noted, and those who have strongly marked curves are given special remedial treatment. We have noticed that in the case of a girl who has only a slight curve a year of gymnastics and swimming will often cure this.





PHYSICAL TRAINING  
FOR BOYS



## PHYSICAL TRAINING IN A BOYS' DAY CONTINUATION SCHOOL

R. J. MOORHOUSE (*Member of Council and Board of Examiners for British and Swedish Gymnastics, of the British Association for Physical Training*).

'To be a good animal is the first requisite to success in life, and to be a nation of good animals is the first condition to national prosperity.'—HERBERT SPENCER.

PHYSICAL training is in 'the air.' Is it to stay there or is it to become part and parcel of the Continuation School? Are we to become a nation of 'good animals' or are we to gradually sink in the physical standard? If the former two things are required, first, the body must be given a fair chance of development by physical education, and second, the factory conditions must be drastically altered. Of the factory conditions I leave it for others to speak, but I cannot plead too hard for physical education to go hand in hand with the mental training of the coming schools. The army authorities discovered its great value in building up the human body as an efficient fighting machine. See the young recruit after a few months' training. The narrow chest and round shoulders give place to a breadth, depth and fullness; an alertness and self-reliance in place of the slouch, which make it seem almost impossible that we are observing the same person.

If we as a nation are to hold our own, then our men of the future must possess a highly developed, well-trained brain. But can such a brain be found in the undeveloped, unsound body? No; the body required to supply such a brain must

## PHYSICAL TRAINING FOR BOYS

be well built and vigorous—a body that will stand by its owner when severe indoor or outdoor work is required, when long hours have to be spent at the desk or in the workshop. Who is going to do the better brain work—he whose brain is steadily fed with healthy, rich blood made by the perfect machine, or he who, by the neglect of his muscular system, lacks the vigorous heart, lungs, and digestive system? Assuredly the former; for moderate muscular work will strengthen heart, lungs and digestion, whereas neglect of the muscular system will cause them to become weak and troublesome. Let us then be guided by the experience of the army and by judicious exercise give to the whole of our youth the opportunities now given to the few. Not with the idea of making efficient fighting machines, but for the purpose of creating such a race as shall have a joy in life arising from a strong, healthy, vigorous manhood and womanhood, that shall be able to laugh at the little worries that must come along, feeling life to be a glorious thing, a life founded on superb health, for health is the one thing most desirable in life.

The strong, healthy, well-set-up body will benefit its owner not only in the present but perhaps more so in the future, for it will lay up such a store of vitality and stamina that shall carry it ever onward through life to a ripe old age. Even if perfection is not reached, it is as well to remember that ‘a bright and uncommon head on a broken down, or nearly broken down, body is not going to make half as effective a man in the life-race as a little duller head and a good deal better body.’

Life from a muscular point of view is becoming very easy. By the increased facility for travelling we are forgetting how to walk. Instead of weights being lifted by muscular effort a button is pressed and machinery performs the task which in the past had to be done by human effort. This is recognised by Henry Drummond, who, in ‘The Ascent of Man,’ says: ‘So great indeed is the advantage of increased mechanical supplements to the physical frame rather than exercising the physical frame itself, that this will become nothing short of a temptation, and not the least anxious task



## HOW IT DEVELOPS THE MIND

of future civilisation will be to prevent degeneration beyond a legitimate point, and keep the body to its highest working level.' Let us by all means keep the body to its highest working level, and as a means towards this end physical education should receive its correct place in the curriculum of our schools. Looking at this subject from another point of view the question might well be asked, 'Is physical training a help to mental training?' In games there is a spontaneous movement. These movements are not preceded by any conscious element; there is no psychological accompaniment beyond the muscular experience attending the carrying out of the movement. They may be called random movements. We give the minimum of attention when we do a thing from habit and when there is no distinct element of desire or purpose present. Hence habitual actions are often said to be performed instinctively, or automatically.

In physical training the movements are performed to words of command. In order to perform them the pupil must visualise as it were, and be able to detach the movement, making it a separate object. The command calls forth a response which has its origin in the brain. A brain activity is thus set up corresponding to the unfamiliarity or speed of the movement required. Take, for example, a quick movement where the command denotes that it must be performed at the highest speed. There is a quick activity in the brain cells, giving rise to a quick visualising and stimulating process by the performance of the movement, thus teaching the pupil to think and act quickly.

Mental work requires a sufficient blood flow through the brain. Exercise by increased circulation washes out impurities at the same time that it increases brain activity, and thus, if the exercise has not been too severe, there is a refreshing and stimulating process, leaving the brain structure in a better condition for mental work. Thus the break in school work for the gymnasium is not time wasted but time gained.

All voluntary actions commence as mental actions involving the use of certain parts of the brain, motor nerves, and muscles. Before an unfamiliar movement can be made there must be a

## PHYSICAL TRAINING FOR BOYS

concentration of the attention on the movement desired to be performed. This concentration varies with the kind of movement. Should it be a simple or familiar one the concentration required is small, but in the unfamiliar or complicated one—one requiring a large number of muscles to act at once and simultaneously (for instance, advance one leg, bend the other, bend the body forward, raise one arm sideways and the other upwards, doing it quickly to word of command)—it can easily be seen that a great concentration is necessary. Now what is the effect of this high degree of concentration on the pupil? Will it help in his study, in the workshop or office? Will it tend to make him into a more valuable workman?

Anything helping to cultivate the powers of concentration, whether it is through physical training, hand and eye training, or by means of quick observation, will undoubtedly help in quickening the intellect.

Physical training will prove useful to the discipline of our youths. When leaving school the boy has arrived at that age when he thinks all discipline should be cast aside. This is a time when he needs a firm hand—when the habit should be ingrained into him that he must learn to obey commands. The gymnasium here has a decided advantage. I do not mean that there should be a cast-iron discipline, but such as will cause the whole attention to be concentrated on the lesson, and in a subconscious manner the discipline here engendered will reflect and make itself felt in the life of the pupil.

What time should be devoted to the subject? At least one hour per week. This would give a lesson of forty-five minutes with fifteen minutes for changing from ordinary clothes into gymnastic costume and back again, for if the maximum benefit is to be derived the clothing must be such as will allow perfect freedom of the limbs. The size of the class should not exceed twenty-five. This number would allow some degree of individual attention. Experience teaches that if the lesson is given in the afternoon, when the vitality is low, it is not advisable to always conform to the routine lesson, but to give as much variety as possible, to appeal

## SUGGESTED METHODS OF TEACHING

more to the imagination than the intellect. More relaxation should be allowed in the discipline and an element of fun frequently introduced. In the summer, if it is at all possible, take the class into the open and teach sports.

The lessons must be given by a master of his subject : they must be given by an expert, and that expert should be allowed to teach the system which he can make most interesting, the most alive to his pupils, and not be cramped and confined to a special system. Lectures should also be given on the objects and benefits of the lessons. The pupil should know what the teacher is aiming at. Get him to take an interest in the development of his body.

For compulsory classes music would not be advantageous, but in case voluntary classes are conducted in connection with the school, by all means have music. It gives a stimulus to the class. The pupils will not come for the educational benefits but for real enjoyment, and if music is a means of attraction, why not have it ?

Competitive games will be found very useful. Divide the class into equal teams and appoint a leader or captain for each team. Give games of a competitive nature, by means of which points can be obtained. The teams should know the marks scored during each lesson, with the final results at the end of the term. Boys enter keenly into this class of game. The teacher should insist that the leaders take full control of their teams. They will, of course, be the smartest boys. Commencing their leadership in a small way will help them eventually to become real leaders of men.

One of the results of physical training is a decided increase in lung capacity. In the classes held at the Bournville Works the average increase is 25 per cent. for the first six months. Now the value of a good lung capacity means considerable reserve for physical exertions and to meet untoward conditions, such as bad ventilation and diseases of many sorts. There is a still greater value in the fact that the extra supply of air to the lungs means a richer supply of blood and a decreased tendency to consumption. Big-chested people who know how to use their lungs are, as a rule, strong people. The child



## PHYSICAL TRAINING FOR BOYS

with feeble lungs, the prospective consumptive patient if you like, taken early in hand, will gradually advance in every direction. The flat, narrow and hollow chest will depart and a full, deep and roomy one will take its place, and the weakly youth, with a tendency to lean the head forward and thus produce round shoulders and cramped chest, will give place to the youth with the well-knit body and erect carriage—a future man of wealth to the nation instead of a burden. The cost will repay itself in helping to give a ‘Grade I’ nation

Where the city of the healthiest fathers stand  
Where the city of the best bodied mothers stand,  
There the great city stands.

WALT WHITMAN.



A CAMP SCHOOL  
FOR BOYS



## A CAMP SCHOOL FOR BOYS

W. J. M. MERRETT, B.A.

**I**N the first place the Camp School is essentially a school, but it is conducted under camp conditions; the warp is camp, the woof is school, and the fabric is a most delightful recreation both for body and mind.

The instruction is essentially practical, and although a syllabus is drafted out before the school begins, a very large amount of the best work is incidental and, shall I say, accidental. It is the incidental work that is so very valuable because it shows to the individual that instruction and wisdom can be accumulated at every turn. Valuable elementary work is done in geography (mathematical, astronomical, economic, geological), history, natural science, nature study, literature, and surveying in all its branches, and in every case it is done 'on the spot' as it were. When these studies are pursued under conditions which the camp life affords, and when the theories underlying them can be discussed at ease, in the welcome shade of a wood or seated round the cheerful blaze of a huge camp fire, the benefits are bound to be greater, and the desire to pursue these studies further when the camp is a thing of the past must be stronger than could otherwise be the case.

That the practical work done may not be regarded as merely pleasant experiment and interesting conversation, a certain amount of written work is done. Diaries are kept rigidly, and practical examples in the mathematical and surveying work are done, while sketches are made when helpful. Without this there would be a tendency for the work to be

## A CAMP SCHOOL FOR BOYS

regarded too lightly and to become subordinate to the camp side. This is a danger to be guarded against.

It has been our practice to devote the morning session to two or three lessons in the neighbourhood of the camp, and to take an excursion in the afternoon or vice versa. This is varied once or twice in the week by taking a whole day excursion to some place of note where work of a valuable nature is done. Perhaps I can best tell the story of our camp school by giving two or three sketches of our life in the camp school, and I have chosen quite typical examples. The first is our Monday in camp at Rubery.

I. Rubery is a village on the borders of the city of Birmingham, about nine miles from the city centre. It is situated in the Lickey Hills and has an elevation of about 700 feet above sea level. There are two permanent structures on the camp site, which is in a field belonging to the Chadwich estate. One of these structures is a kitchen fitted with a range and large boiler and the necessary pantry and cupboards. The other structure is merely a roof raised on iron pillars over a raised concrete floor. Here lessons can be conducted in wet weather, and meals are taken at all times.

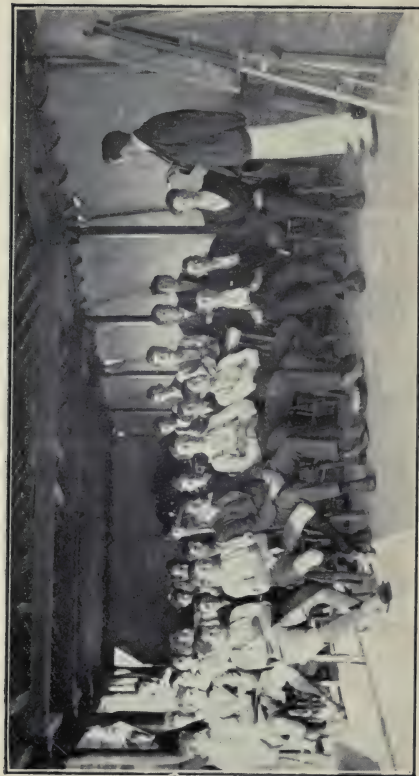
The boys arrive by 10 A.M. and all is bustle. Tents are erected in the lower part of the field and the company divides itself into 'tents,' each of which is responsible for one day's fatigue duties. These consist of preparing food for the cook and washing up crockery. The first day's 'fatigue' gets rapidly to work and soon we sit down to an excellent cooked dinner whilst 'fatigue' waits on us. Dinner over, there is an hour's rest to prepare for the first serious business, and to allow 'fatigue' to get their dinner and wash up. Then the boys are marshalled and away we go on a walk to learn at first hand some of the secrets of earth structure. We set off down the road to the quarry, and here we walk round and examine the illustrations pointed out. We note :

- (1) The nature and structure of quartzite and its relation to sandstone.
- (2) The difference between clays and sandstone.





CAMP SCHOOL AT RUBERY, WORCESTERSHIRE



RUBERY CAMP SCHOOL: LESSON IN 'THE BARN'

## A GEOLOGICAL EXCURSION

- (3) Stratified rock and its peculiarities, faults, folds, stratification, scarp, &c.
- (4) The formation of soil, subsoil and the resulting nature of vegetation, and of drainage.
- (5) The effect on scenery of rocks of various kinds which form part of the surface.
- (6) The presence or absence of fossils and the reason.
- (7) The value of recognising fossils.

After walking through this quarry we strike off southward along the road to the other quarry, and there we verify what we have noted in the former quarry, and note how the quarrymen use the bedding planes of the rock in order to assist them in their work. Here too we are able to estimate the economic value of the stone and to see how easily it breaks up. There is almost a complete absence of sticky mud on the roads, and the reason is clear from what we have learned about the quartzite.

Next we proceed to 'the Lickey.' This great 'play-ground' is very popular, and while we are seated amongst the bilberry bushes we talk about the scenery spread out before us :

- (1) The waterparting between the Severn and Trent.
- (2) The reasons why the Malverns appear so bold.
- (3) Why alluvial plains are so flat.
- (4) Why the Bilberry Hill is not very thickly wooded.
- (5) The necessity of 'breathing spaces' to great industrial centres.

The sun is fast approaching the west, so we 'cut' down the hill-side and make our way across the fields to our camp, which is about two miles away. Tea is ready and we are soon seated round the tables and keeping the fatigue party busy. We begin to feel the effect of fresh air and green country-side, and we do justice to the fare provided. After tea we all go down to the thicket at the bottom of the field and begin cutting down the trees marked out. Here the fun is fast and furious and the work heavy, but soon there emerge from the wood little groups of lads bringing useful logs for the camp-fire.

## A CAMP SCHOOL FOR BOYS

We accumulate a fine wood stack and build our camp-fire, and as the flames begin to crackle and roar we wheel the piano out of my tent and sit around with our Scottish Students' Song-Books. From the flag pole we have erected the big flag is hauled down, so that it 'may not catch cold,' and with an obliging visitor from a neighbouring house at the piano we settle down to a couple of hours' music. The solo is followed by the full-throated chorus, and old favourites are roared out till the last notes come quavering back in echoes from the impenetrable blackness of the wood on the opposite hill. The greatest favourites are songs with choruses. As a variation the masters sometimes tell stories or read short stories or extracts from well-known books, while occasionally we hold a debate. The free life of the fields and the good fellowship existing between staff and school make this much easier and more pleasant than may be supposed.

'Fatigue' has just brought our supper down the field to the camp-fire, and after a hymn and a selected passage read from the Bible we turn in. For a few minutes a confused murmuring rises from the camp till all the boys are in bed, and this gradually subsides till only one or two boys are left droning out a conversation. The camp-marshal snaps out an admonition, and as I sit over my reflections by the dying embers of the fire, the calm peacefulness of the night seems to saturate my imagination. I soon slip between the blankets, and the countless weird little noises of the night-folk in the field die away and I sleep soundly.

II. That terrific din which nearly caused me to fall out of bed, is Jimmy Anderson sounding the reveillé on his bugle. You must jump, for the day has come. The great red sun has not yet peeped over the brow of that eastern hill, and below us in the hollow the mists of the morning hide the coppice like a gossamer veil. There is a distinct nip in the air this morning. Swallows skim along over the top of the dewy grass, and here and there a late rabbit scurries into the thicket. Shortly we are all lined up, and after Bible-reading the whole party, except the day's 'fatigue,' troops down to the ponds and soon we are splashing in the water. As we come back





LESSON ON FIRST AID



SURVEYING LESSON.

## LESSONS IN CAMP

the sun is just showing over the hill, the shafts of light turn the dew-drops into myriads of jewels, and sounds of life arise all around from bush and brier. Have you ever slept in an open field, or—not so bold—in a tent? Have you got up before the summer sun and bathed in the limpid water of a lake? If you have you will appreciate the appetites that await breakfast.

In due course the time for lessons draws near. To-day one section will do some Physiology and First Aid with one of my colleagues. A second section will take the chain and arrows and will survey the field, make accurate drawings of it, and find its measurements, with another colleague. The third section are to study the contour of the district from the survey map, the model made from the map and from the countryside itself. We shall notice at the same time the geological peculiarities of the district and calculate gradients, &c. Among the geological peculiarities is the bed of gravel resting on the bed of clay, and the consequent line of springs; there is also the great wind-gap through which the main road runs. Much can be said about each of these phenomena, and the story of their formation can be made extremely interesting and graphic. These things affect the contour of the country, and also the nature of the agriculture and water supply. I mention these facts because of the multitude of things that come within the range of our work. At the end of each hour these classes change about until each has had its full course. All this work is done in the open, and when black-board work is necessary the class sits in the shade of the trees.

After these lessons there is a welcome rest and then dinner follows. This is always a hot meal, well prepared by a good cook in the camp kitchen, and the capacity of the cooking utensils is tested to its extreme limits, for the outdoor life has worked wonders on the appetite. There is a compulsory rest of one hour after dinner, before we begin the excursion which takes place in the afternoon.

The excursion for to-day is to the Cofton Hackett reservoir, the source of water supply for some of the canals which constitute a feature of the Midlands. The walk is most

## A CAMP SCHOOL FOR BOYS

pleasant as we wend our way through the paths of the Lickeys and down towards the Severn basin. There are several things to talk about as we go. We pass quarries where faulting is clearly shown; beds of Bunter Pebble—these pebbles the villagers believe grow, for as fast as they are removed the weather uncovers others—and an explanation of their origin is given. We take to the fields and are struck by the extent of the rabbit-warrens. The reservoir is soon reached and a lecture given in which the following points are made :

- (1) Nature of canals: necessity of water supply for various reasons.
- (2) Advantages and disadvantages of canals compared with other means of communication.
- (3) The place of the feeder.
- (4) The history of canal construction, development and decay.

The return journey is most pleasant and we reach camp to find tea ready. After tea the lads play football in the fields, in which goal-posts are set up. It seems incredible that these lads had spent the afternoon walking several miles, but they quickly recover from fatigue. We spend the evening in the usual manner, and although we do not feel tired we are very soon asleep.

III. We are very early afoot this morning, for much has to be done before we set out for our whole day excursion to Worcester. Each of us has to carry his lunch, and this has to be prepared. It is another glorious day and breakfast is soon disposed of, and the camp ground put in good order. Before seven o'clock we are striding briskly down the great Bristol road for Bromsgrove, where we take the motor 'bus for Worcester. The clear air of the morning sends the blood coursing through our veins, but by the time we reach Bromsgrove the warmth of the summer sun has begun to make itself felt. We have not long to wait, and soon we are bowling along the Worcestershire roads at a fine pace. We reach Worcester in good time and make first of all for the Commandery. The



## WORCESTER AND ITS STORY

venerable proprietor does not spare himself when he finds so large and appreciative an audience. The story of the Worcester fight is vividly portrayed, and we see the actual battle-grounds and the sites of various incidents in that battle. To me and to the other masters present the visit to this old-world place and the story we heard are invaluable. The interest of the young fellows is held to the last word, and as we eat our lunch on the grassy banks of the Severn, I endeavour to put this incident of the Civil Wars into its proper place. Even as we sit in the welcome shade of the trees we are able to learn a lesson in river erosion and flood-plains from what we see before us, for wide and perfectly flat plains stretch away from the river on both sides, while the river runs rather rapidly between fairly steep banks. Alongside, marks on the walls indicate the flood-levels of great floods, and so we get an idea of the vast amount of water that falls during a storm or a period of wet weather.

Next we visit the Cathedral. I can only very briefly indicate the points of importance. They fall into two great groups—Historical and Architectural. Not only do we see King John's tomb and many historic relics within the Cathedral, but various parts of the edifice, the cloisters, chapter-house, crypt, &c., each and all form the subject of interesting talks on the life and customs of the time they indicate; especially is this true of the cloisters. Then, again, the very positions of Chester, Worcester and Gloucester illustrate the importance from Roman times of guarding the pontis, and each of these cities depends for its site on a river. Of course this point was illustrated by many other towns up and down the Welsh and Scottish borders.

Now we make our way a few yards to the Royal Porcelain Works, and note with care and pleasure the process of making this high-grade ware. The educational value of this visit is very great, for it is quite distinct from anything we have done to-day. This is a lesson in practical handicraft as well as highly technical work; each branch of the process is explained by our guide, and we are impressed with the great amount of skill necessary to produce the porcelain.

## A CAMP SCHOOL FOR BOYS

The day is now well advanced and we are beginning to feel the results of our exertions. We make our way back to the 'bus, and after a very pleasant ride we reach our camp in the cool of the evening and sit around the camp-fire, co-ordinating and arranging the main facts of what we have learnt during the day, crammed with incident and interest.

IV. Our last camp school was not a fixed one. The week was spent touring from Birmingham to Stratford-on-Avon, and we travelled along the canal on a barge fitted up for the occasion, and drawn by two pretty little donkeys. A range and a large boiler were placed in the boat and all arrangements were made for preparing meals on board, but six bell-tents were carried so that at night we camped in a field alongside the canal, wherever we happened to be. The canal lies through some of the loveliest scenery in Warwickshire and is nearly derelict, but this made the changing scene all the more picturesque.

On this occasion, too, a part of the instruction was given as formal lessons and part in excursions, and these occurred each day. Sometimes it was necessary to take these lessons as the boat travelled, but at other times we took our chairs ashore and had the lessons on the canal bank or in a field. This week's work can best be illustrated by taking two typical days.

On Tuesday morning we had to be awake at 5.30. We had reached Yarningale Common the previous night and had camped in a field below the aqueduct. The stove chimney was already sending up a steady stream of grey smoke, and after a splash in the aqueduct and a brisk rub down we found breakfast ready, and you can rest assured it found us willing. Soon we were streaming away across dewy fields and making for the high road to Hatton. This was a fairly long walk through orchards and lanes, but at last we came to the Warwick Canal, and after following it for half a mile we reached Hatton station. A short run brought us to Warwick. Here we visited the old parts of the town and especially the Leicester Hospital. The lads listened to a short talk on the hospital and on the life of the times in which it was erected. There was always a conscious effort to make these talks



CAMP SCHOOL BARGE AT LICHFIELD



PASSING THROUGH THE LOCKS



VISIT TO WARWICK CASTLE



## THE SCHOOL ON THE BARGE

interesting without being frivolous, and instructive without being tedious; the correlation of the work was also most carefully thought out.

We next went to the famous castle. It should be quite unnecessary to enumerate what can be learnt here, but we were careful to show why the castle was placed just where it is and why it is so little damaged by war or vandalism. The guide fashioned his remarks along the lines that I suggested to him, and gave us a remarkably able account of fortifications in general and of that castle in particular. The story of the castle from the time of Ethelfleda to the Civil War and even later is one of incident and interest, and many times during the week we talked about various Earls of Warwick or of people whose portraits are hanging in the castle.

After leaving the castle we made our way to the Beauchamp Chapel in order to see the various tombs and things of interest, and to correlate them with what we had already seen and with what we were to note later on. Our time was short, so we had to hurry to the station to catch our train for Bearley Aqueduct. A short walk from Bearley station brought us to the long aqueduct. We had dinner on the canal bank, and when this had been cleared away we proceeded down the canal. The afternoon was occupied with two lectures on the boat as it proceeded, and this proved to be a very fine arrangement, for we were somewhat tired, and to sit quietly on the boat as it glided smoothly, noiselessly between the trees and listen to a connected account of our morning's practical work, was a most profitable method of occupying the time and turning it to good account.

About five o'clock we reached Bishopton, where we were to camp until Thursday. One section fell to work at once to prepare tea, while the rest took the tents into the field alongside and pitched them ready for the night. After tea my colleague and I went into Stratford-on-Avon to make arrangements for our visit to the Shakespeare places of note. As we returned along the canal bank it was growing dark, and when the luminous bell tents showed up in the gloom we were glad, for we were very tired.

## A CAMP SCHOOL FOR BOYS

The notes of the gramophone were filling the camp and the lads were enjoying a sing-song. We were soon in bed and there was very little talking after 'lights out,' for we had to be afoot about 5 A.M. for another strenuous day.

During this tour a vast amount of educational work was done ; the following are the chief points :

Visits to Baddesley Clinton—a medieval manor ; to Warwick, Stratford-on-Avon, the Edge Hills, at the battlefield of Edgehill, Henley-in-Arden, Preston Baggot, and Aston Cantlow.

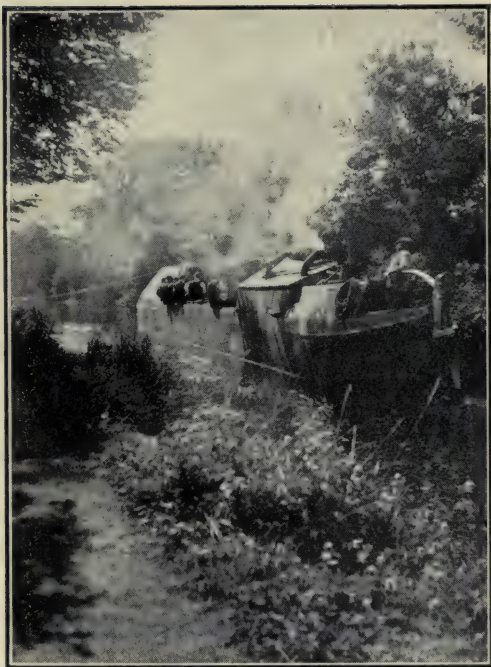
Practical lessons in geology, practical mathematics, architecture, history, and many other things too numerous to mention, made up a very full week.

I am afraid that these few lines fail to give any idea of the large amount of live interest which is generated on these tours and excursions, but as a teacher of experience, both in school and out of it, I cannot affirm too strongly that the amount of work of great educational value done on excursions and in camp schools of this kind is very much greater than that which could be done in a school in the same subjects and in the same time. My sincerest wish is that the example set by Messrs. Cadbury Bros. will be taken up all over the country, and also be continued and developed by this firm in the future.

### ADDENDA.

Each week's camp school consists of about thirty boys' whose ages range from fourteen years to eighteen years. They are selected from all branches of the works for two main reasons. The first is that no section or department shall suffer by the withdrawal of a large number of its operatives at one time ; and the second is that, by taking boys from all departments, the school escapes the danger of becoming sectional and tends to break down any idea of class distinction that may arise between different grades of employment at the works.

I found it difficult to 'place' most boys with respect to their particular occupation so thoroughly effective is this



CAMP SCHOOL ON BOARD THE BARGE :  
LESSONS 'EN ROUTE'



VISITING DR. JOHNSON'S HOUSE



AT DR. JOHNSON'S STATUE



## OCCUPATIONS OF THE STUDENTS

scheme, and it was only in odd cases that the clerk or tin-box soldering employee was easily noted—of course I do not refer to style of work done, but rather to the spirit shown in the camp. If we take one week as a type, I find :—

|                           |   |    |   |   |
|---------------------------|---|----|---|---|
| 4 boys at 14 years of age |   |    |   |   |
| 5                         | „ | 15 | „ | „ |
| 11                        | „ | 16 | „ | „ |
| 7                         | „ | 17 | „ | „ |
| 3                         | „ | 18 | „ | „ |

These boys represented eighteen different ‘shops,’ even when I count all branches of the office as one, and all branches of chocolate moulding as one. There were boys from the following departments :

Electrical, Printing, Analysts, Scale Repairing, Confectionery, Office (all branches), Basket Stores, Soldering, Mould Making, Biscuit Making, Machine Bag, Warehouse, various Moulding Departments, and so on.

There were boys who were apprenticed to skilled trades and others whose occupations were very largely unskilled, so that the range of intelligence was wide but did not always correspond to the occupation followed.

(In the summer of 1919 the experiment of a Camp School on a canal barge was again carried out, the route chosen on this occasion being from Birmingham to Tamworth and thence on to Lichfield, returning by the same way.

A journey on the canal from Bournville to Droitwich and Worcester is contemplated.)



# ARTS AND CRAFTS





## ARTS AND CRAFTS

ERNEST F. HILL (*Head Master of the Bournville School of Arts and Crafts*).

*'Life without industry is guilt, and industry without art is brutality.'*—RUSKIN.

THE development of the artistic sense is an exceedingly valuable part of the education of young employees. Those concerned with mental development have realised that study and practice in the Arts and Crafts help to a remarkable degree in the cultivation of :

Observation.

Memory.

Visualisation (mind picturing or mental imaging).

Imagination (and invention).

Concentration of mind.

Self-expression.

Taste.

In the exercise of these powers and attainments accuracy of detail, carefulness, and thoroughness in execution will naturally follow. To pupil and employer alike the economic value of such trained abilities cannot be over-estimated. The cultivation of these powers does not by any means exhaust the value of training in the Arts and Crafts. To be able to make a clear and expressive sketch or working drawing is in itself a valuable asset.

The appreciation and love of nature—from a simple wild flower to a glorious expanse of land or seascape—will be

## ARTS AND CRAFTS

awakened in some pupils, and strengthened in many, by a course of Art training; and the appreciation of beautiful objects—from a simple bowl to a splendid cathedral—will be considerably increased after some practice in the Arts and Crafts. Such appreciation of things beautiful has a very healthy and elevating influence, not only on the pupils but on those with whom they come in contact.

The young employee's education must be on very broad lines; a truly liberal culture. Therefore it is our aim to lead the pupils towards self-development in the fullest sense.

The practice and study of the Arts and Crafts as a means of mental development will not only be valuable in itself but will act and react on other studies and on the pupils' work and life in the direction of spiritual freedom and development. To the young adolescent, with his many awakening and unformed impulses, the disciplinary value of regular attendance at a class in either of these subjects, together with the harmonising influence of environment and subject, will exercise a beneficial influence at a time when the right kind of influence is so great a necessity. Therefore it is the high privilege of the teachers concerned to help to carry out this training, to educate more than to instruct, and to help to remove obstacles that are in the way of real progress.

*Interest* must be maintained throughout the course, as the time spent in the practice and study of either subject will be beneficial to the pupils in proportion to the interest taken. We must have *enthusiasm*, both on the side of the teacher and of the pupil, without which little can be accomplished, and the pupil's *personal effort* must be aimed at rather than showy results.

Development under such conditions of study must increase the good taste and judgment of the pupils, making them more intelligent; more valuable to the community, their employers and themselves; in short, better citizens. Much of the good we look forward to in the future will, we believe, grow out of a better understanding of, and higher education in, the principles underlying the Arts and Crafts.

I would like to point out that the principles underlying

## UNDERLYING PRINCIPLES

the training in these classes are based upon many valuable suggestions of Mr. Catterson-Smith (the Director of Art Education for the City of Birmingham), to whose valuable guidance the city owes so much, particularly for his insistence on the very great importance of the cultivation of *Memory* and *Visualisation*, and his excellent advice to learn to design *in the material*.

The classes are held in the Bournville School of Arts and Crafts, Ruskin Hall, situated in the centre of the Model Village, amidst ideal surroundings. This, together with the splendidly equipped rooms, cannot fail to exercise a refining influence on the minds of the pupils.

The time devoted to Drawing, &c., or Metalwork, is one and three-quarter, or one and a half, hours per week, during a session of about forty weeks.







I  
PLANT DRAWING FROM NATURE  
IN WATER COLOUR  
FROM MEMORY



CLERK

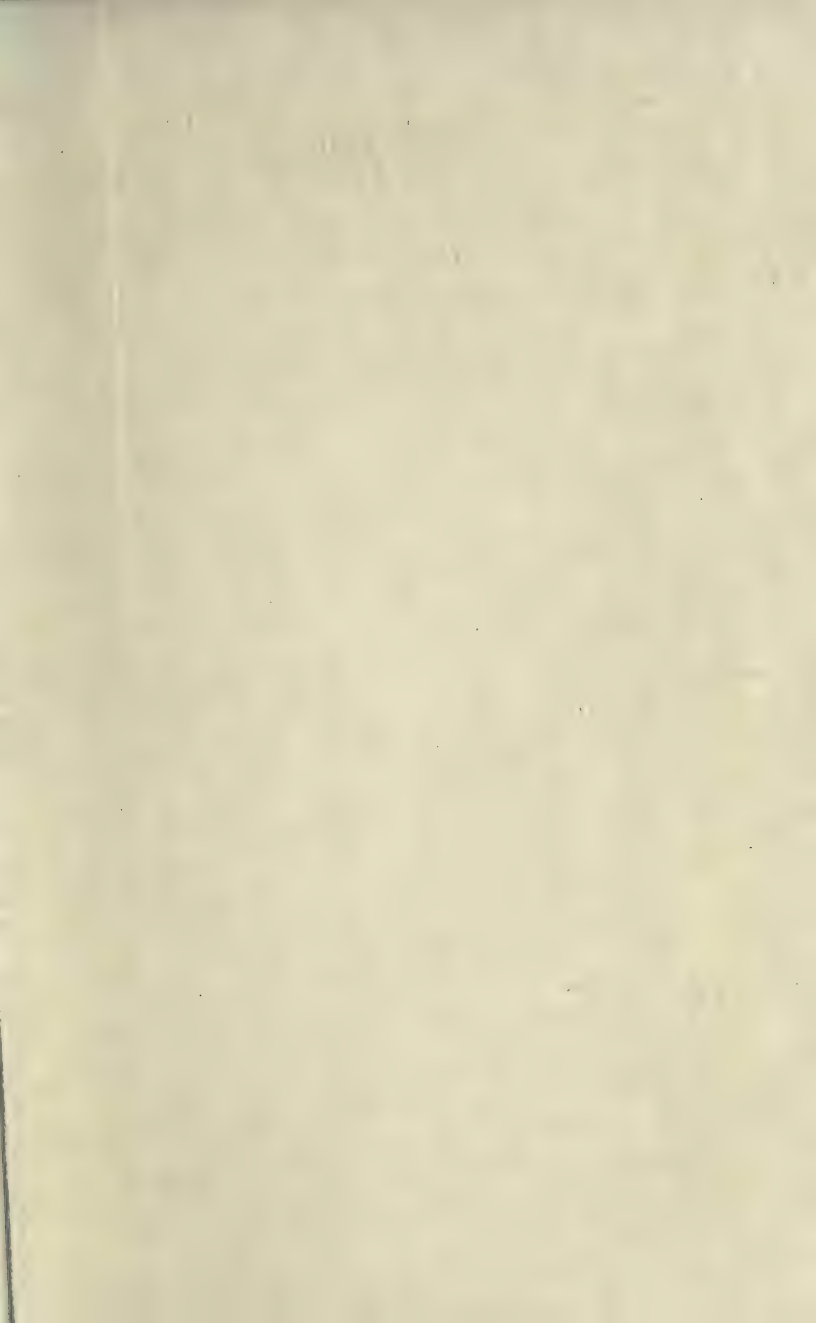
AGE 18

NELLIE DREWE

DRAWING. DESIGN. ETC.







STUDIES IN WATER COLOUR OF  
THE WILD ROSE  
FROM MEMORY



## DRAWING, DESIGN, ETC.

EDUCATIONISTS who are responsible for the management of well-organised schools now recognise the value of *drawing* in a scheme of general education, and in this continuation course the aim has been to build on their good foundation and carry the work considerably further.

In the classes of students who wished to take drawing as a part of their second half-day (voluntary) continuation studies, the drawing course was arranged, fully recognising the necessity of observation and memory training, the vital importance of developing the powers of visualisation and imagination, and realising that the expressing of an idea is much more educational than merely copying. The pupils were encouraged to give independent expression to their own ideas, and thus self-criticism developed naturally at the same time.

The course included :

- I. Drawing from Nature (in a very broad sense).
- II. Drawing from objects of good form.
- III. Constructive model drawing (or dictated model drawing).
- IV. Drawings of buildings (or parts) of local interest.
- V. Free expression or illustration.
- VI. Elementary design, including geometrical pattern design.
- VII. The consideration of and discussion on works of art, shown by means of reproductions of suitable pictures, photographs of architecture, &c.

## ARTS AND CRAFTS

VIII. Other subjects as and when desirable in individual cases were encouraged and taken. (See page 153 : Illumination.)

During the session most of the students studied about four of these subjects, no one being required to take all during one session.

### I. DRAWING FROM NATURE

*(In pencil, water colour, or pen and ink.)*

THE greater part of this work has been done from memory, in most cases the students being allowed a number of subsequent looks.

The advantages of drawing from *memory* are many. The specimen that has to be drawn will be much more carefully observed and examined ; its growth, structure, and details will be perceived much more intelligently and impressed with greater vividness on the mind. When drawing from memory it is necessary for the pupil to fix his mind intently on his work, thus helping to acquire the valuable habit of mental concentration.

The visualising faculties will be exercised and developed in the attempt to remember *by* forming and recalling mental pictures. The power of visualising (or mind picturing) is of the greatest value in most spheres of life, for without it there can be no invention or imagination. A pupil having had such training will be better equipped for *any* occupation.

Nature drawing is not limited to drawings from odd specimens of flowers, but includes more thorough study, such as the growth and development of a particular plant from seed to fruit, or from budding twig through many stages of growth to the seed stage. The pupils are encouraged to make their studies as thorough as possible, including details from botanical and artistic points of view. All are encouraged to draw, in addition, the type forms of leaves, flowers, &c.,



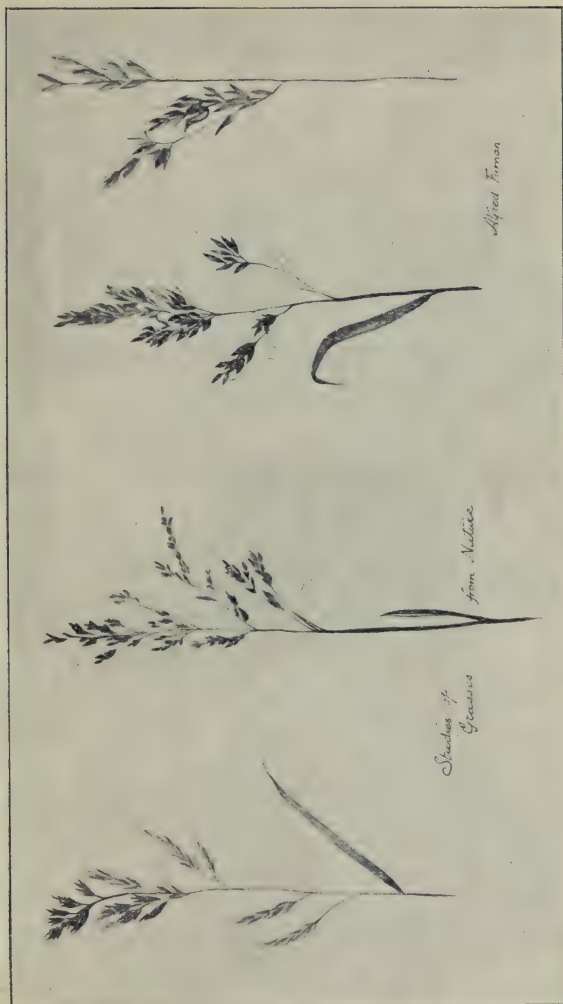
# III

## STUDIES OF GRASSES FROM NATURE IN WATER COLOUR

MACHINIST

AGE 16

ALFRED FIRMAN



IV  
STUDIES IN WATER COLOUR



ALICE RUSSELL

AGE 17

CLERK

V  
WATER COLOUR STUDIES FROM STUFFED SPECIMENS



NOS. 1—5 BY JAMES MAYOR  
NO. 6 BY ERNEST MARKS

AGE 16  
AGE 15

TROLLEYING  
FRUIT PRESERVER

## DRAWING FROM NATURE

of the plant being studied. It should be noted here that such memory drawings will be usually more expressive than direct drawings, where many aspects of leaves, &c., are drawn distorted by an undesirable amount of foreshortening, as so often shown in photographs.

The procuring of suitable specimens for nature study fortunately presents less than usual difficulty.

Interesting plants, &c., are provided (usually once a week) by the head gardener of Messrs. Cadbury Brothers, Ltd., from their Bournville Works Nursery. The Bournville Village Trust also very generously provide us regularly with specimens from their nursery. In addition, a number of varieties are grown in the Ruskin Hall garden, adjoining the school. After the war we hope to have a larger portion of the garden planted with a greater variety of trees and plants most suitable for nature study, so that, when desirable, the plant or tree may be studied whilst growing.<sup>1</sup>

**ILLUSTRATION I.**—*Plant Drawing from Nature in Water Colour.* This sheet of studies of plants was drawn and coloured from memory (with repeated looks). To make clear what is meant by this it may be well to explain that the pupil provides or is given a specimen (or specimens for comparison) of a plant. Time is allowed for very careful observation, the student committing to memory and visualising as far as possible. The specimen is then put out of sight, and the pupil proceeds to draw as much as can be remembered. When necessary another look is allowed, the specimen again covered, and the pupil proceeds with the drawing or colouring—still from memory. Other looks are allowed when the pupil feels the need for refreshing his memory, but during the whole of the time the pupil is drawing or colouring it is understood that the specimen must be out of sight. This sheet of studies represents a number of spring flowers, &c., Cotoneaster, Berberis, Larch, Jasmine, Forsythia, and Almond, which were executed in water colours.

<sup>1</sup> Since the above was written, the nature study garden has been completed and has proved of great benefit to the pupils.

## ARTS AND CRAFTS

ILLUSTRATION II.—*Studies in Water Colour of the Wild Rose from Memory.* This set of water-colour drawings, executed from memory (with repeated looks), comprises studies of the Wild Rose—made at intervals during the course—showing growth from the early bud stage to the hips, careful studies of the development and growth of particular plants being generally of greater educational value (requiring more care and thought) than studies of odd flowers. It will be noticed that undesirable foreshortening and imperfect leaves are avoided. The results, although in some cases appearing elementary, are full of character, there being a total absence of merely photographic aspects, the mind having been brought well into action, in addition to hand and eye training.

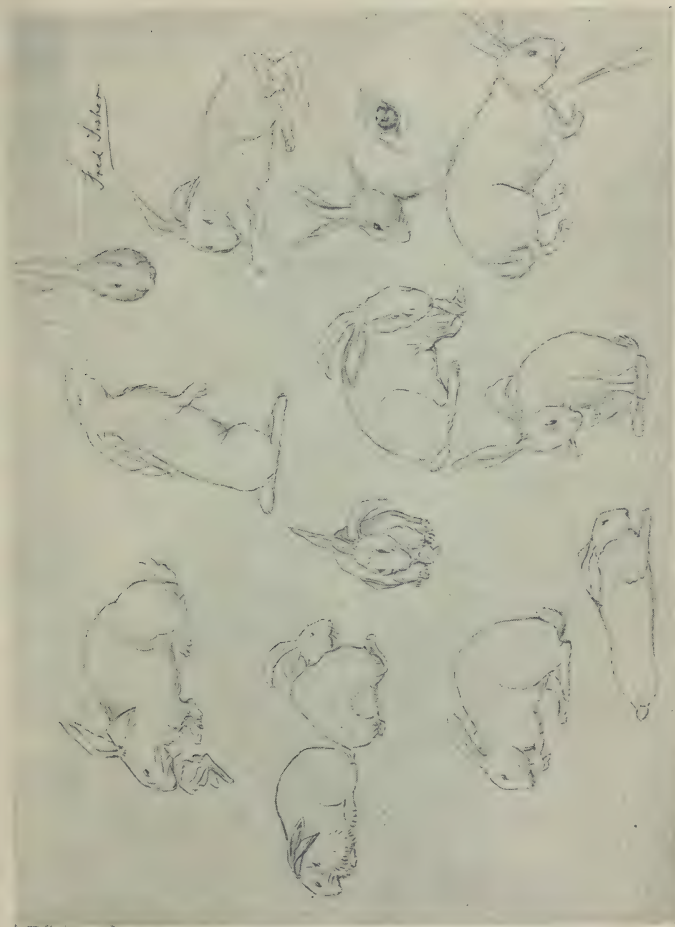
ILLUSTRATION III.—*Studies of Grasses from Nature in Water Colour.* This is an interesting set of Nature studies (in water colour) from grasses, and shows the pupil's great interest in, and very careful study of, one of the commonest forms of Nature. Yet I know the pupil had great delight in making these studies, which in the originals show beautiful variety of form and colour. The joy of being able to see and express well the beauty and varied forms of what was *merely grass* to most beholders was his.

ILLUSTRATION IV.—*Water Colour Studies from Actual Butterflies.* The exquisite beauty of colour shown in the paintings is unfortunately absent in the accompanying reproduction. Their charm reflects the pleasure experienced in delineating them, and the joy of having expressed on paper something so beautiful. The careful observation of, and intimate association with, such superlative forms of Nature must surely have an elevating influence on the pupil.

ILLUSTRATION V.—*Water Colour Drawings from Natural History Specimens.* A pleasant set of studies drawn from stuffed birds. In the execution of these drawings the boys found very great pleasure; at the same time the studies were of distinct educational value.



VI  
PENCIL SKETCHES OF  
A LIVE RABBIT



CLERK

AGE 15

FREDERICK FISHER

VII  
PENCIL STUDIES OF HEADS FROM LIFE



## DRAWING FROM NATURE

Unfortunately, the good colouring in the drawings is absent in the reproduction.

ILLUSTRATION VI.—*Pencil Sketches of a Live Rabbit.* An interesting set of pencil drawings from memory. Before the pupils commenced to draw, the rabbit was put upon a large table in front of the class, where it remained throughout the lesson and was quite free to move about. The pupils were allowed about fifteen minutes to observe it carefully. Afterwards, sitting with their backs to the animal, they were required to draw any position they chose from memory. After subsequent looks the pupils were required to draw other positions which would introduce as much life and as many characteristic positions or actions as possible.

This exercise is valuable in helping to cultivate quick perception, memory, and visualisation, also in aiding rapid expression of impressions.

ILLUSTRATION VII.—*Pencil Studies of Heads from Life.* There is no limit to the variety of work that a pupil may attempt, provided the study is of real educational value for mental development in a broad sense. In this case the pupil had a strong wish to attempt drawing from life. These are four studies drawn not from posed models but from her fellow pupils while they were at work in class, and represent four girls whose works are illustrated in this chapter. See Illustrations IV, X, XII, XIV.

ILLUSTRATION VIII.—*Pen and Ink Studies of Natural History Specimens.* This pupil has executed among other subjects an interesting sheet of studies in pen and ink. This medium was chosen by her for expressing a variety of specimens of natural history. She had previously executed a considerable amount of work in pencil and colour. Working in pen and ink is valuable, not only because it cannot be rubbed out and tends towards precision, but it has the distinct advantage, through a change of medium, of avoiding any feeling of monotony on the part of the pupil.

## ARTS AND CRAFTS

### II. DRAWING FROM OBJECTS

THE objects are chosen largely from those in everyday use, care being taken to ensure they are of good form and construction, and that they serve the purpose for which they are intended in the best way. Ornaments which are so often neither beautiful nor ornamental are avoided, as are also small models, or objects made of different materials from what they would be made of if intended for use. To realise and appreciate the beauty of many objects of common use one need only observe the shapeliness of a large axe, or tools or implements generally, or a boat—all absolutely fit for their purpose, their shapes having gradually evolved from their requirements and use. Picture the satisfaction and pleasurable sensation experienced from the use of these things; compare them with many so-called ornaments seen in ordinary houses, such impossible things as glass slippers and china dogs, both of which children occasionally bring to draw from in schools!

The training of the pupils' taste and of their ideas of good selection, and the cultivating of their appreciation of things that are true, fit, and beautiful are very desirable, and this subject should be interesting and helpful. Although both direct and memory drawing in this subject are good, it is found that drawing the objects from memory (with one or more looks) is more valuable for mental development than direct work.

### III. CONSTRUCTIVE MODEL DRAWING

*(Or Dictated Model Drawing).*

IN this subject a description of the object is given, including the position in which it is required to be drawn, or a plan and elevation are drawn on the blackboard. Before commencing to draw, the pupil is required to picture



VIII

PEN AND INK STUDIES OF NATURAL HISTORY  
SPECIMENS

CLERK

AGE 17

LILY LLOYD



[PENCIL SKETCH OF THE OLD MANOR HOUSE  
NEAR THE SCHOOL OF ART



## DRAWINGS OF BUILDINGS

in his mind the appearance of the object, or objects, in the desired position. Then he draws from his mental picture, with the aid of any knowledge of perspective he has, or acquires during the lesson. This particular kind of model drawing gives the mind much more exercise than simply placing the model in sight of the pupil and allowing him to draw directly from it.

### IV. DRAWINGS OF BUILDINGS (OR PARTS) OF LOCAL INTEREST

THIS exercise, whilst one of the pleasantest, is yet at the same time of considerable educational value. The students and pupils of the Bournville School of Arts and Crafts are remarkably fortunate in having a beautiful building—the Ruskin Hall—to work in, and the immediate surroundings are particularly rich in interesting buildings very suitable for drawing. Directly opposite the School of Art is the Meeting House, a fine example of modern architecture which several of the students have already drawn. On the other side of the village green are the elementary schools—extremely fine specimens of modern schools—a very interesting row of half-timbered houses and shops, also a unique and very beautiful example of old English domestic architecture, the old Manor House of Selly (a corner of which is illustrated), and in the centre of the green is the Rest House, of very pleasant design, and a distinctive feature of the village.

ILLUSTRATION IX.—*Pencil Sketch of the Old Manor House near the School of Arts and Crafts.* This pencil sketch (see previous page) is one of a number drawn out of doors directly from the building. Near the end of the session each girl in this class made a sketch of this very interesting old house, part of which dates back to the beginning of the 14th century—a description of which would be most interesting:

## ARTS AND CRAFTS

but space forbids. It must be mentioned, however, that this remarkable specimen of old English domestic architecture was acquired by Mr. Cadbury, removed from uncongenial surroundings about a mile away, restored and rebuilt near one corner of the village green at Bournville. It is an extremely interesting acquisition to the village, and the study of both exterior and interior provides rich material for the pupils and students of the Art School.

### V. FREE EXPRESSION OR ILLUSTRATION OF A GIVEN SUBJECT

THE subject given may take the form of something that the pupil is familiar with—a figure in action, the illustration of a common incident, a quotation from a poem, &c. Whatever is selected by the pupil or teacher for illustration, the idea and carrying out of it must be the pupil's own, freely self-expressed. Great insistence is laid on the importance of pupils attempting to form a clear mental picture of the subject before trying to express the idea on paper.

The pupils are allowed to execute their work in pencil or water colour, but coloured drawings, being fuller expression of ideas, are encouraged.

ILLUSTRATION X.—*Examples of Free Expression—Illustration of Given Subjects.* In this instance the subjects set for illustration were the 'Four Seasons.' The method of procedure was as follows. After forming a mental picture of one of the subjects, the pupil was required with her eyes closed to make a drawing on the back of her paper. The object of this is to assist the pupil to form a clear mental picture. (The drawing, executed with closed eyes, has very little value as a *drawing*.) Afterwards she made a finished drawing in water colour, wholly from imagination.



X

ILLUSTRATION—FREE EXPRESSION  
IN WATER COLOUR

*Elsie Wakeman*



*Spring*



*Summer*

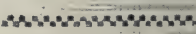
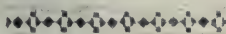
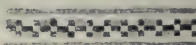
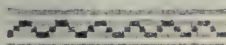
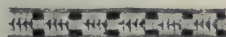


*Autumn*

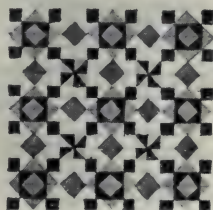


*Winter*

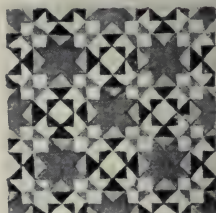
PATTERN DESIGNS—BORDERS & DIAPERS IN COLOUR



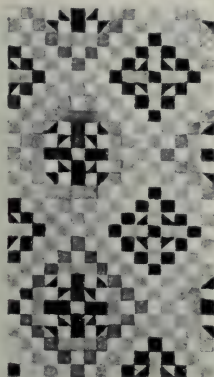
*Olive Ames*



*A. Russell*



*Olive Ames*



*J. Mills*



*N. Drewe*

A. RUSSELL  
J. MILLS

AGE 17  
AGE 17

CLERK  
CONFECTIONER

O. AMES  
N. DREWE

AGE 17  
AGE 18

CLERK  
CLERK

## ELEMENTARY DESIGN

### VI. ELEMENTARY DESIGN

**M**OST of the students devoted some time to elementary design, and the subject was divided into two parts:

- A. Geometrical pattern designing.
- B. The arrangement of simple units (visualised).

**SECTION 'A.'** In the geometrical pattern designing the first step in the exercise was taken by requiring the pupils to draw horizontal and vertical lines across the paper to form squares and oblongs; then to fill in portions with colour in any pleasant order that appealed to the pupil. Some of the squares were divided into triangles to give variety. No attempt at making the designs suitable for any articles of manufacture, such as tiles or linoleum, was aimed at; the exercise was simply to train the pupils' sense of 'pattern' formation. Obviously this subject necessitated explanation of, and practice in, the use of instruments, also a little geometrical drawing.

Apart from the developing of the powers of design and invention, much care was necessary in setting out the patterns, which required a considerable amount of accuracy and neatness on the part of the pupils.

**ILLUSTRATION XI.**—*Examples of Pattern Designing in Water Colour.* The upper portion of this illustration shows a series of designs for borders in water colour, giving quite pleasant and brilliant effects of colour. The pupils were encouraged to use bright colours (which unfortunately do not show in these reproductions), expressing the idea of gaiety; sombre and dull colour schemes being at this early stage discouraged.

The lower portion of Illustration XI shows four interesting examples of elementary designs for diaper patterns. The results of the pupils' efforts at designing gave them much pleasure—in the feeling of satisfaction of having designed—really created—something.

## ARTS AND CRAFTS

SECTION 'B.' Arrangements of simple units (visualised). This is a stage in the study of design more advanced than section 'A.' A simple form, such as the letter U or D or any other simple and distinct unit, is suggested by the teacher, and the pupil is first required to picture the unit clearly in his mind (at this stage observation, memory, and visualisation are exercised), then to visualise an arrangement in some pleasant order of two of the same units; afterwards three or four of the given unit. (Here invention comes into action.) When the pupil can see the arrangement clearly in his mind he is required to make a drawing with closed eyes on the back of the paper. The object of this is to ensure, as far as possible, that the pupil is actually visualising, also to aid in mind concentration. Finally, a careful drawing is made (with eyes open) of the pattern that the pupil aimed at designing in his mind. The visualisation of colour is also aimed at. The effort to form clear mental pictures is of the utmost importance, and its value in all mental training cannot be over-estimated.

ILLUSTRATION XII.—*Examples of Elementary Design Arrangements of Units (visualised).* This very interesting set of sixteen designs all based on the same unit (the given unit will be seen at the top of the page), pleasantly arranged in twos, threes, and fours, and in most cases interlaced. In this set of exercises (visualised design) a clear mental picture of the arrangement of the units formed in the mind was aimed at previous to commencing to draw out each design.

Here also bright colour schemes were used, it being felt that encouragement in this direction would help to develop the pupil's love for brilliant colours. A number of these colour schemes are very pleasant, suggesting beautiful heraldic effects.

ILLUSTRATION XIII.—*Elementary Design. Interlaced Arrangements of Units—executed in Water Colour.* Another set of units pleasantly arranged, being the work of several boys. The units that the designs were based upon are



# XII

## ELEMENTARY DESIGN

### ARRANGEMENTS OF UNITS



XIV  
ILLUMINATED PAGE

# THIS IS TO BE MY SYMPHONY

I try to fix my thought on the good  
that is in every soul and make my  
appeal to that. And that plan is a  
wise one judged by results. It secures  
for you loyal helpers worthy friends  
and gets the work done. I do not be-  
lieve in governing by force or threat  
or any other form of coercion. I  
would not arouse in the heart of  
any of God's creatures a thought  
of fear or discord or hate or revenge.  
I will influence men if I can but  
only by aiding them.

## ELEMENTARY DESIGN

indicated at the side of the sheet. The size of each of the actual designs is from three to five inches. The originals are in colour. These designs proved very encouraging, the pupils in a number of cases being surprised with the results of their efforts.

ILLUSTRATION XIV.—*Illuminated Page, with Gold Capital, Black Writing, and Decoration in Colours.* This illuminated page is the work of a girl employed at chocolate decorating. The pupil is specially interested in lettering, so that this subject is arranged as part of her art course, in addition to nature study, &c. Although illumination does not directly bear upon her vocation, yet the practice in design of any kind should be distinctly helpful in her work, in addition to the mental training in a broader sense. This pupil had previously attended Evening Classes at the Bournville School of Arts and Crafts, in addition to the Young Employees' Continuation Classes. In all centres where there is opportunity the ambitious pupils will avail themselves of it for extra study, so that it is necessary to make provision for this type of pupil to do special work more advanced than the majority of the pupils attending the Continuation Course.

**A**T many lessons during the session reproductions of suitable pictures were shown to the pupils. After careful observation, discussion was provoked and encouraged.

The influence of good pictures or reproductions is distinctly elevating, and discussion shows to what extent the pupils appreciate the merits.

Variations were made by showing objects or reproductions of objects of worth in the Arts and Crafts.

Great interest was evoked by showing large photographs of some of the Cathedrals, and drawing the pupils' attention to some of their wonders.



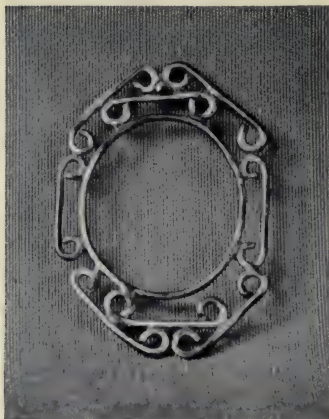


# METALWORK





XV  
MINIATURE FRAMES



FRANK E. ILES    AGE 15    BISCUIT PLANT

XVI



ERNEST W. GILBERT    AGE 16    TIN BOX SOLDERER



## METALWORK

THE real delight of making something—the creating of a beautiful subject—the designing and executing in the material by the pupil is an experience of intense pleasure, and of the greatest educational value. Constructing things is the expression of a strong natural tendency, from the making of a child's sand castle to the building of a cathedral, and we must utilise and direct this inclination in education. Those who can do or make things beautifully are the only ones who are truly alive.

The pupil who has had training in a craft will appreciate and be critically interested in so many things that make up real life; he will have formed a truer idea of the work and dignity of human labour, and will have become more accurate, precise, and dexterous generally, more skilful and intelligent. In fact, the value of practice in a craft cannot be over-estimated. To be able to draw well is a great asset in the study of any craft, yet it is encouraging to know that pupils with little capacity for drawing can execute quite pleasant pieces of handicraft. This has been proved over and over again in metalwork, embroidery, &c.

The pupils learn to *design in the material*. As a matter of fact an elaborate drawing or careful preparatory design on paper would probably be found unsuitable when the pupil began to work it out in metal, and in most cases prove a hindrance to one who wishes to carry out in metal an idea which he has in his mind, as the design of such an object will so much depend on the capabilities and limitations of the materials and tools used, the fitness for the purpose for which it is designed, combined with common sense, leavened with some good judgment and taste. Working and designing

## ARTS AND CRAFTS

in the material save the pupils whose capacity for drawing is poor from becoming embarrassed and disheartened, as it is unnecessary for any work on paper to be brought into comparison with those who are more gifted in delineation.

Fortunately, the classes are held in the rooms of the Bournville School of Arts and Crafts, which have for some years been well equipped with all necessary apparatus and tools for the use of the students who attended the metalwork classes in the evenings.

The course for metalwork commenced with the teacher showing and explaining the use of the tools and the properties of the metal.

The metalwork course includes :

1. Wire drawing and the making of twists and plaits.
2. The arrangement of wire units to form patterns and the soldering of same together and on to metal.
3. Raising.
4. Saw piercing.
5. Tool patterns (including the making of the punches).
6. Fitting and Mounting.
7. Simple jewellery, including elementary stone setting.

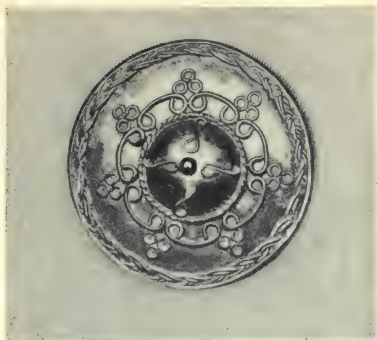
A small amount of enamelling is also attempted by a few pupils.

The objects made include serviette rings, bowls, cream jugs, sugar-basin, ash and trinket trays, matches stand, salt cellars, pepper pot, door finger-plates, cabinet handles, miniature frames, cylindrical boxes, buttons, buckles, and brooches.

Some of the articles are plain, relying on their pleasant shapes for their beauty; others are enriched with saw piercing, tool patterns, simple repoussé patterns, or applied ornaments in the form of arrangements of units and twists soldered on to the various objects.

ILLUSTRATION XV.—*A Miniature Frame.* This illustration shows a pleasant little design by a quite elementary

XVII  
A SMALL BROOCH



ERNEST W. GILBERT  
SOLDERING DEPARTMENT  
AGE 17

XVIII  
COPPER BUCKLE



A. E. GEORGE  
AGE 15

XIX  
COPPER BUCKLE



ROWLAND E. WESTBURY  
AGE 15

CHOCOLATE MOULDING DEPARTMENT

XX  
COPPER BOWL



E. TOMALIN

AGE 14

CHOCOLATE MOULDING DEPARTMENT

XXI

A  
CREAM JUG

B  
TRINKET BOWL



ALBERT E. HUGHES  
AGE 15

FRANK B. COGBILL  
AGE 15

CHOCOLATE MOULDING DEPARTMENT



## METALWORK

pupil whose vocation is widely different from the study of metalwork. This example is his first piece of work executed in the class. The design was obtained by the arrangement of eight similar units which the pupil made by cutting off pieces of copper wire into equal lengths, bending to the desired shape, and soldering to an elliptical wire to form a miniature metal frame. A certain amount of invention was necessary in arriving at the little design. The pupil had tried several other arrangements before deciding on this one. In addition to the technical knowledge gained through working in the material and the using of the tools there was the new experience of joining (i.e. soldering) metal to metal.

ILLUSTRATION XVI.—*A Miniature Frame.* This small frame was made in the same class as the previous one, and it is interesting to note that the same unit was used in this arrangement, producing a totally different effect from the previous design.

ILLUSTRATION XVII.—*A Small Copper Brooch.* This brooch shows a pleasant arrangement of very simple units soldered on to a circular disc of metal, slightly domed up, with a smaller dome in the centre. The brooch has a pleasing border formed of plaited wire flattened and soldered just inside the rim, the brooch being completed by a pin, catch, and joint.

ILLUSTRATION XVIII.—*A Copper Buckle.* Of harmonious design made in a similar way to the brooch just described, the enrichment consisting of twisted and plain wires and repeated units of wire of very simple shapes, arranged in pleasing order and soldered on to a disc of copper, slightly domed.

ILLUSTRATION XIX.—*A Copper Buckle.* The ornamentation of this buckle is formed by soldering plain and twisted wires, also slightly domed pieces of copper, on to a circular disc of metal which has been slightly domed. It will be seen that the plain pieces of wire are units of quite simple forms. This buckle shows the value of the repetition of simple units, giving a very pleasant and richly decorative effect.

## ARTS AND CRAFTS

ILLUSTRATION XX.—*A Copper Bowl.* This copper bowl is raised, i.e. made from a thin flat sheet of copper by hammering to the desired shape, planished and polished. Not only an exercise in which the pupil learnt some of the capabilities and limitations of the material and tools used, but also of much greater educational value in a broad sense, mainly because he is expressing his feeling in regard to shape.

ILLUSTRATION XXI.—*A, Cream Jug. B, Trinket Bowl.* The cream jug, one of several executed by the boys, hammered to this shape from a piece of sheet copper, with the addition of a handle made from a strip of thicker metal, cut and hammered into shape and soldered on to the body.

The small trinket bowl was raised by the pupil from a flat sheet of metal and a base made separately, fitted and soldered on. The rim was strengthened and made pleasant to handle by the addition of a piece of half-round wire. Wire of square section was soldered on to the bottom to form the rim of the base. Ornament is applied in the form of tooled patterns, the tools used having been previously made by the pupil. Twisted wire was also used to help ornament the base.

ILLUSTRATION XXII.—*A Sugar Basin.* This small basin was made in a similar way to the trinket bowl just described (Illustration XXI B), but the sugar basin is ornamented mainly with flutings.

ILLUSTRATION XXIII.—*A, Serviette Ring. B, Stand for Matches.* The serviette ring was made by a boy (age 15) who was employed as a confectioner. During his first nine lessons he executed this interesting specimen of handicraft, which shows the ornamental value of saw piercing.

The stand for holding matches is another example of saw piercing, with the addition of a little tooled pattern on the base and twisted wire under the rim.

It is interesting to note that the vocations of these two pupils had no connection with metalwork, so that it was surprising that the results were so good. No doubt the

XXII  
A SUGAR BASIN



A. E. GEORGE

AGE 15

CHOCOLATE MOULDING DEPT.

A  
SERVIETTE RING

XXIII

B  
STAND FOR MATCHES



AUBREY BUGGINS  
AGE 15  
CONFECTIONER

HENRY HANDS  
AGE 17  
ALMOND ROOM

XXIV  
TRINKET TRAY

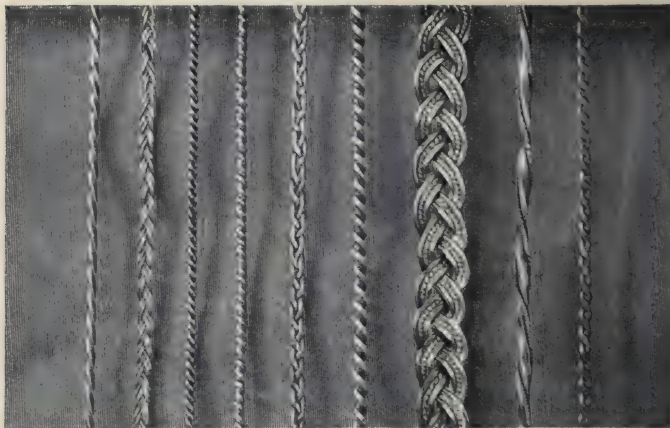


FRED MALE

AGE 16

STOREKEEPER

XXV  
SPECIMENS OF TWISTS AND PLAITS OF WIRE



DRAWN TO VARIOUS THICKNESSES, ETC.



## METALWORK

training has been distinctly helpful in their mental development.

ILLUSTRATION XXIV.—*A Trinket Tray*. This small tray was made from sheet copper, hammered to shape, strengthened by wire soldered on to the edge. The pleasant pattern is formed by the repetition of triangular marks made by a punch (the tool having been filed by the pupil from a piece of square steel into a triangular shaped punch). The resulting pattern appears to be the shape left between the triangular tool marks.

ILLUSTRATION XXV.—*Specimens of Twists and Plaits of Wire drawn to Various Thicknesses, &c.* A number of previous illustrations show the uses of twisted wires for the decoration of the objects executed. This illustration shows a variety of patterns of twisted and plaited wires made in these classes. The uses of these for decorating large or small work are some of the most pleasingly ornamental, and at the same time twists and plaits are thoroughly characteristic of metal. The number of varieties that it is possible to make of twists (single and compound), also plaits, is very great; and when we consider that the wire used may be thin or thick, round, square, flat, &c., in section, twisted or plaited, or combinations in great variety, open or closely made, it will be realised that the resulting effects that are possible are almost unlimited. Still further variety may be obtained by flattening the twists or plaits, as in numbers 2, 5, 7, and 9.

ILLUSTRATION XXVI.—*Copper Boxes*. Two small cylindrical boxes, both having slightly domed lids fitted on to a bezel soldered to the inside of the body. Plain and twisted wires are soldered on to 'A,' and both lid and body are enriched with punch decorations. 'B' is plainer but quite dignified, the whole kept severe in form, with the exception of a pleasant repoussé pattern on the top of the lid.

ILLUSTRATION XXVII.—*A, Copper Box. B, Salt Cellar.*

## ARTS AND CRAFTS

The copper trinket box with lid and the salt cellar are two more examples of fitting and mounting, both examples relying for their beauty on their simple shapes. The box being very carefully finished, and of good workmanship, is ornamented with great restraint, with bands of plain and twisted wires.

ILLUSTRATION XXVIII.—*A Pepper Pot.* A good exercise in raising, fitting, and mounting; this pleasant piece of craftsmanship relying for its beauty on its good shape and nice proportion, without any ornamentation of chasing, repoussé or punch decoration.

ILLUSTRATION XXIX.—*A Brass Handle for a Cabinet Door.* This small handle is of interest on account of having been designed so as to require no soldering in the making. The handle was wrought into shape from a piece of brass wire bent into shape, interlaced, and portions flattened, bound around with wire and riveted to the handle plate, which was cut from a piece of sheet brass into shape, and raised as shown in the photograph. It is interesting to note that the boy who made this cabinet handle is a carpenter.

ILLUSTRATION XXX.—*Brooches.* *A, Enamel on G. Silver.* *B, Enamel on Copper.* This illustration shows two examples of brooches, decorated with enamel and set with simple stones. These are two of the earliest efforts at enamelling attempted in the school. The units forming the cloissons used in the designs are of very simple forms, circles, spirals, &c., repeated to form the patterns. Twisted wires were soldered around the settings to enrich the effect. Unfortunately, the photograph is unable to show the beautiful shades of blue of the enamels.

XXVI  
COPPER BOXES

A

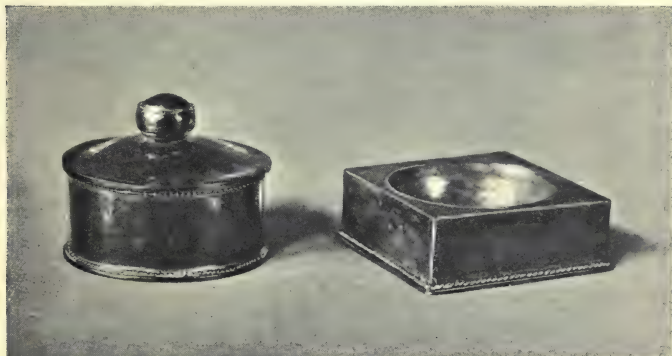
B



LESLIE H. HUBAND  
AGE 15  
CONFECTIONER

FRANCIS T. CLAY  
AGE 17  
CHOCOLATE MOULDING DEPT.

XXVII  
COPPER TRINKET BOX      SALT-CELLAR



FRANK E. ILES  
AGE 16  
BISCUIT MAKER

EDGAR COLEY  
AGE 15  
WAREHOUSE

XXVIII

PEPPER POT



ERNEST DOWNTON  
AGE 16  
SOLDERER

XXIX

CABINET HANDLE

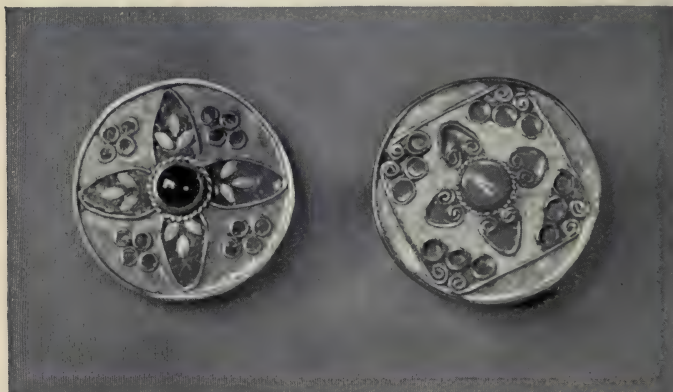


GEORGE SMITH  
AGE 15  
CARPENTER

### XXX. ENAMELLED BROOCHES

ENAMEL ON SILVER

ENAMEL ON COPPER



CHARLES JEFFERIES  
AGE 17  
CONFECTIONER

NORMAN ARNOLD  
AGE 16  
CHOCOLATE MOULDER



## METALWORK

A QUITE natural question may here be asked : Why have students joined the *voluntary* classes for Art and Crafts ? They decided to attend *not* because the classes have direct bearing on their vocations, a number of the pupils being clerks, others being engaged at storekeeping, confectionery, biscuit making, moulding, trolleying, fitting, tin-smithing, soldering, bag-making, boxing chocolates, wrapping chocolates, carpentry, gardening, &c. The pupils attended *not* because of any immediate monetary gain, some even being slightly the losers in this direction, their weekly wages actually being a little less. On their 'voluntary half-day' these boys and girls were not paid for the time of attendance, but those who did the best work or made most progress, in addition to regular attendance, were rewarded by means of bursaries given by their employers. The bursary winners amounted to 40 per cent. of the total entries made in the voluntary classes last session. It should be noted that the pupils had no idea while attending the classes that anything in the way of bursaries would be given. So that it is surprising and gratifying to know that so many joined the voluntary classes in spite of these conditions. Either the pupils or their parents were wise enough to look to the future and felt that it was worth while to devote time and energy to aim at being better educated in a liberal way, not content to shuffle along in the easiest direction, but really anxious to become as intelligent as possible, not only welcoming but taking advantage of such valuable opportunities.

These are healthy signs in the direction of greater happiness, of real living instead of merely selfish existence, and promise well for the future, in some degree realising 'that man shall not live by bread alone.'



CO-ORDINATION OF  
SCHOOL AND WORKS





## CO-ORDINATION OF SCHOOL AND WORKS

MORLAND & IMPEY, LTD.

**M**ESSRS. MORLAND & IMPEY, LTD., have been sending their young people to the Boys' and Girls' Day Classes for Young Employees for the past six years. The firm is not a large one, engaging in all between 200 and 300 work-people, and its trade consists in the manufacture of Kalamazoo Loose Leaf Books, including a great deal of printing and paper work.

In the first term in 1914 about forty young people were sent, including twenty-six girls, whose ages varied from fourteen to sixteen years. These young employees were not selected, but this firm determined to begin with a definite rule making school attendance compulsory for all who were working for the firm, or who joined from time to time.

It is important to state that the members of this firm have always been careful in the selection of their workpeople, and consequently their young people are likely to be more alert than the average. The employees are engaged under a thought-out system in order that the right type of person shall be found for the particular job that is open. It is also a rule of this firm that no young people are engaged who have not attained the sixth standard at the age of fourteen years, and if possible a child is chosen who has passed the seventh standard. This has an important bearing on the continuation school work, as it is probable that a very mixed result would be obtained if children were sent from a factory which had observed no standard of education, and it is certain that the difficulties of the teachers in the day classes for the young

## CO-ORDINATION OF SCHOOL AND WORKS

employees would be very much increased by the introduction of a large number of scholars who had been sub-normal through the whole of their career in the elementary school.

The works of Morland & Impey, Ltd., are situated in the country at Northfield, some seven or eight miles from the centre of the city of Birmingham, and nearly all their young people are drawn from the district immediately surrounding Northfield. They therefore have the advantage of avoiding all children from the slum areas or from the congested districts of the city, and as Northfield is more or less suburban, the scholars of the elementary schools are not of the slow thinking type that are found so frequently in districts far removed from manufacturing centres.

It will therefore be seen that the class of children sent by this firm to the School for Young Employees is probably rather above the average of young people engaged for factory work, and their experience might therefore be considered as one not likely to be gained by manufacturers whose works are situated within a city and whose young employees must be drawn from all classes in order to meet the demand for labour.

The classes for boys and girls are quite separate. The former is at Cotteridge, about two and a half miles from Northfield, and the school for girls is held at Bournville, which is a mile further away. The distance is a disadvantage, as it is necessary for the young people to go by train, and more time is lost than would be the case if the school were in the parish of Northfield. The firm would not care to have the schools on their own premises, as they consider that a change of surroundings for the school work is wholesome, and likely to lead to more concentration.

A number of difficulties have presented themselves since the scheme was inaugurated, but these have gradually disappeared with one or two exceptions.

The first difficulty was the great dislike of the continuation classes on the part of the scholars, and this appeared as a serious menace to the school work. This firm does not limit the classes to manual workers; members of the office staff under the age of eighteen years also attend. During the

## ATTITUDE OF THE STUDENTS

first few years as much opposition was shown from those in the office as from those engaged in the various parts of the factory.

It is probable that the continuation school was disliked by the young people because they felt that their education was complete after attaining the seventh standard at the age of fourteen years, and further school was considered as an unnecessary discipline and altogether too childish for those who had begun to earn their own living. This is not unnatural, as school to the average child is not popular, and all scholars look forward to the time when the close discipline of the class-room can be changed for the greater independence of the office, factory, workshop or farm, and the children doubtless think that when they have left the Council school, they have put away childish things.

Another reason for the dislike of the continuation classes is that school work generally requires more concentration than the early stages of factory or office work. The class-room does not contain the early excitement of works life, neither is there as much interest for the average child.

The parents of the children have generally been very much in favour of the continued education, as they can realise the great importance and advantage of further study, many of them having suffered through lack of schooling in the earlier years of compulsory education.

The children from the firm's factory incur no financial loss in attending the day classes, as it is considered to be work-time and is paid accordingly. Train fares are paid, so the children are under no penalty through compulsory attendance, but they have always been obliged to pay the very small sessional fee of 2s. 6d. per annum, and to purchase the necessary books and equipment, which only entail a very small sum.

Morland & Impey, Ltd., have not found it easy to rearrange the young people's work without inconvenience, and it will prove a difficulty, in some cases worrying in the early stages, as all factory managers can realise. It is not easy to dispense with the services of all young people even for half a day per week, although the half-days may be split



## CO-ORDINATION OF SCHOOL AND WORKS

up from Monday to Friday, and it is possible that some slight increase of junior workers would be necessitated by a firm adopting continuation classes.

The firm has found the difficulties of absence lessen as their experience in dealing with the problem increased. By careful arrangement it became possible to liberate the young employees on the regular morning or afternoon. During the last stages of the War, when labour was very scarce and the demand for young people for all sorts of munition work was incessant, it was often extremely inconvenient to fit in the school times, but, with few exceptions, it was found possible to do so, right through the War, and the exceptions became so rare that the firm strengthened the rule insisting that no excuse could be taken for the absence of children from their classes.

It has not been found desirable to move young people from one department to another in order to make up for absences at school, as the change has a disorganising effect on the worker, and the different discipline through coming under the authority of various foremen is harmful and distinctly against the factory career of juniors.

It is the opinion of this firm that employers of labour would very soon discover that the apparent economy of changing the young people from one department to another would prove expensive in practice, as the same standard of work could not be maintained. It will be necessary to duplicate the staff in certain cases where a man or woman is depending on the assistance of a boy or girl in carrying through certain work, but it is possible to obtain great assistance from the continuation school authorities, who are willing to fall into any reasonable alteration of school hours that suits the employer.

It is unlikely that the conditions of 1916-17-18 will be repeated. If it was possible to carry on the classes through the War, it will be much less difficult for employers to arrange their work in normal times.

It has sometimes been suggested that the firm should offer prizes to their young employees for good school work, but



## EXPERIENCE GAINED

the company has declined this form of reward as it considers it would be unwise for young people to strive for a gift more than for mental development. When scholars have shown special ability, or have been highly commended for hard work and keen endeavour, the firm have, in some cases, shown their appreciation by a present of books, the selection of which is left to the scholar in question.

The subjects taken by the young employees are Arithmetic, English, Geography, Physical Training, &c. The curriculum does not contain any item of a technical character, neither are scholars developed along lines that apply to the particular factory work they are engaged upon during the rest of the week. The opinion is strongly held that much greater development is possible through the study of school subjects, rather than in a technical education applied to factory work, and the firm would not care to liberate its young people for technical work only.

The experience gained by Morland & Impey, Ltd., during the past six years invariably shows the great benefits brought about by the further education of their young people; the development in some cases has been very marked. There has not only been an increase of mental capacity, but a nimbleness of mind has been noted that can be traced directly to the day classes.

It will be a fallacy to suppose that brilliant scholars at the day continuation classes are also the best workers, although it usually happens that such is the case. Boys and girls who have developed into a 'student' type are sometimes absent-minded and unsatisfactory in the factory, and in these cases pains should be taken to find the right sort of work, and when this is found a very valuable worker will be made in the course of time.

Difficulty has also been frequently noted among the young people of fifteen and sixteen who are altering very rapidly through physical growth, and not only their school work but their factory work is affected adversely during this time.

This firm considers the position of all employees every six months, when records are gone through and wages revised;

## CO-ORDINATION OF SCHOOL AND WORKS

at this time the school reports are always taken as a part of the records affecting the prospects of young employees. It is possible, by means of the school reports, to eliminate children who are unfitted for various departments, and it is probable, as time goes on, and greater experience is gained by continuation schools, that employers of labour will be guided very largely by this means in proper departmental selection.

It has been proved beyond doubt that the change from the elementary school to factory life causes intense fatigue during the first few months, and the occasional reversion to school life must be refreshing to those who are beginning manual labour.

It would be useless to expect good results from night classes which are attended by children who have been working eight or nine hours and are not physically able to concentrate on mental work.

# THE EMPLOYER'S PART





## THE EMPLOYER'S PART IN CONTINUATION SCHOOL WORK

R. W. FERGUSON, B.Sc., A.R.C.S.

**I**N the concluding paragraph of his Memorandum on the Staffing of Continuation Schools, Sir Amherst Selby-Bigge refers specially to experiments on a voluntary basis. The following sentence occurs :—

‘The Board understand that many public spirited firms of employers are willing to co-operate in such experiments ; and they trust that Local Education Authorities will do all in their power to foster and encourage this development, which will both make possible the early absorption of trained teachers as they become available and also afford excellent practising ground for those still in training.’

Experience gained in pioneer work of this kind is by no means confined to the question of staffing. On the contrary it ranges over every aspect of Day Continuation School work. Inquiries on this subject are of very frequent occurrence. They come from many classes of the community, including members and officials of educational bodies, employers (both large and small), teachers, welfare workers, officials of trade unions, and even from individual parents. The questions asked vary almost as widely. Here are a few of them :—

How do you arrange to reduce interruption of work to a minimum when boys and girls are at school ?

Do you recommend one whole day, or two half-days, or several shorter periods per week ?

Are the students paid for their school time and, if so, on what basis ?

## THE EMPLOYER'S PART

Who appoints the teachers—Firm or Local Education Authority ?

Is any distinction made between skilled and unskilled workers ?

What kind of reports or returns do you get from the schools ?

What action—if any—can the firm take if a student is habitually absent, or unpunctual, or guilty of insubordination in school ?

Does the firm recognise good work at school and reward it in any way ?

Does it all pay ? Is it worth doing ? What do the parents think about it ?

To consider these and similar points this chapter has been included, but it has been thought well—even at the risk of digressing—to touch first on the general attitude of employers, both in the past and the present, towards continued education, whether day or evening.

As regards the particular students whose work has been described in earlier chapters of this volume, two or three points may be made clear at once. In the first place, all employees within the age limits of the scheme, boys and girls alike, skilled, semi-skilled and unskilled, participate to nearly the same extent in the educational opportunities offered to them. There is a variation in the upper age limit, but this only affects a comparatively small minority.

The second point is that none of these students have a normal working week exceeding 44 hours, while in certain cases it is less.

In the third place, it has been found that the only satisfactory method of payment for time compulsorily spent at school is by a system based upon either average rates, or normal time rates which vary with the age of the student.

One point further may be of interest. Since this scheme anticipated the 1918 Education Act by a good number of years, it could not be expected to follow precisely the lines subsequently laid down by that Act. It therefore at present

## RETROSPECTIVE

differs from the requirements of the Act in several respects, exceeding these requirements as a rule, but falling slightly short in the number of hours per year. It was also decided that as from September 1919 the scheme should be brought more nearly into line with the Act in the matter of hours, whereas those features of it which already went a good deal beyond the Act should continue. For example, the Act, even when in full operation, appears to admit of a student leaving directly he reaches the age of eighteen, whatever time of the year this may be. This scheme, on the contrary, requires the student to complete the school year in which his eighteenth birthday occurs.

### A. RETROSPECTIVE.

In this section it is proposed to discuss some of the ways in which, during the past ten or fifteen years, employers in this country have assisted in the work of continuation and technical schools. This work has been mainly in the evenings: the employer's contribution towards the evolution of the Day Continuation School will be taken up later. Any consideration of this subject—however fragmentary and inadequate—should be concerned with things which have actually been done, rather than with those things which *ought* to be done, and about which so much is said from educational platforms.

It may be argued that as *evening* continuation schools will shortly become a 'back number' they require only a passing reference, but as a higher type owes something to the less perfect types from which it was evolved, so the Day Continuation School movement owes much to the merits as well as the faults of the old 'Night School.'

The limitations of the evening class are too well known to require elaboration here. Nevertheless, study undertaken after working hours has played a worthy part both in English and Scottish education. Several firms now requiring their junior employees to study in the daytime gained their early experience in enterprises of this kind through carrying out



## THE EMPLOYER'S PART

some scheme of systematic attendance in the evening. There was an element of truth in the reference to 'tired students, taught by tired teachers, and inspected by tired inspectors,' but, in the face of many discouragements, the 'tired student' frequently surprised his more fortunate competitor in the race for knowledge and—incidentally—for advancement. The expenditure of time, money and energy on evening classes has not, by any means, been entirely wasted, though Mr. Creasey in his 'Technical Education in Evening Schools' shows that, in the past, a good deal of it certainly yielded a very inadequate return, largely owing to lack of system, or of proper guidance from those in authority.

In the introduction to his book on 'Continuation Schools in England and elsewhere' Mr. (now Sir) Michael Sadler says:—

'In all these countries public attention is being turned to the problem of continuation schools. And everywhere the lines along which thought is moving point to three conclusions. First, there is need for further limitation of the hours of juvenile labour. Secondly, the law should place all employers, including Government Departments, manufacturers, commercial firms, retail tradesmen, and employers of young domestic servants, under statutory obligation to enable young persons of less than seventeen years of age who are in their employment to attend courses of technical and general instruction for four hours a week at times of day when the pupils are not too tired to profit by the teaching.'

These sentences were written in 1907, and ten years later neither of the conclusions mentioned had been translated into legislative action, so far as Britain is concerned. For 'seventeen years of age' read 'eighteen,' for 'four hours a week' read 'eight'—and we have one of the main provisions of the 1918 Education Acts for both England and Scotland.

Employers, however, had not been altogether idle. Without waiting for legislation on the subject, many progressive firms had launched educational schemes, varying widely in scope and magnitude, but all in greater or lesser degree displaying the initiative which the State and the local authorities had sometimes failed to show. Those employers were doing something constructive while others, who formed the vast majority, contented themselves with grumbling at the



mental shortcomings of the boys and girls who worked for them and wondering ' what we pay education rates for.'

It is difficult to gauge accurately the extent of work done in this way, even in pre-war days, but the attempt has more than once been made. Mr. Sadler's volume, already quoted, devotes forty pages to a tabulated statement of the co-operation effected between schools and employers, the result of a very widespread inquiry addressed to the firms. About the same time, or rather earlier, the Association of Technical Institutions carried out an independent inquiry, on the same subject but addressed to the schools, and published the information in pamphlet form.

An examination of either of these returns suggests that most of the firms giving educational facilities differentiated very clearly between the apprentice—be he premiumed, indentured, or what not—and the ordinary boy or girl whose future lay in unskilled or semi-skilled work.

Evening class fees might be returned—under certain conditions—to students of the latter type, but the youth apprenticed to the same firm would be allowed to attend afternoon classes at the local Technical Institute. In passing it may be asked why apprentices' classes in mathematics and similar subjects have been held in the afternoon so much more frequently than in the morning—certainly not for educational reasons.

This preferential treatment of apprentices has brought into special prominence the educational methods of the larger engineering concerns, as being the firms most given to the employment of regular apprentices, and placed such firms by themselves in a class which is rather outside the province of this chapter.

Turning to the work of firms not primarily concerned with engineering we find some interesting points. It is a strange fact that in general welfare work for the benefit of employees, as well as the furtherance of education, quite a number of the most active firms have been those identified either with foodstuffs or with other simple domestic commodities.

## THE EMPLOYER'S PART

At a conference on social work in factories, held a year or two before the outbreak of the war, it was curious to find that the bulk of the firms participating were connected with one or other of the following :—Soap, starch, blacklead, metal-polish, tobacco, mustard, jam, biscuits, cocoa, chocolate, drugs, printing, publishing, or dyeing. The preponderance of ladies among the representatives at this conference suggested that the special needs of girl employees were duly recognised.

The same tendency still holds good. Recently an Association was formed of firms carrying on Educational Schemes for the benefit of their employees. Connected with the movement are several well-known firms in the engineering and allied trades, but a list of products very similar to the above represents the activities of the other companies taking part.

During the last ten years it has been the present writer's privilege to come into contact with many firms—large and small, progressive and otherwise—to whom had been brought home some measure of responsibility for the education of their boys and girls. In some cases the feeling of responsibility was more or less spontaneous—in a few cases, entirely so. In others it was induced by the persistent visits, or the urgent representations, of the Principal of the neighbouring Technical Institute, the Organiser of local Evening Schools, or some other official of the education authority.

Take an average case. As a first step most firms would agree to refund evening class fees to employees who complied with certain conditions as to regular attendance and satisfactory progress. After that probably the privilege of attending afternoon classes would be extended to a favoured section, generally apprentices. As these students went to school in the firm's time, sessional reports on work done were a natural sequel. If these reports were fully made use of they became one of the most useful links in the chain of co-operation. The question of 'Rewards and Incentives to Study' (which some educationists disrespectfully call 'bribes') is discussed later, but it may be noted here that the production of school reports at times of wages-revision may easily become

## RETROSPECTIVE

a factor of the utmost importance. In quite a number of towns the authority controlling the Technical and Continuation Schools has by systematic effort been able to bring about a much greater measure of co-operation on the part of the employers in the district. The interest shown may take various forms in addition to those already mentioned.

The following are examples :—Publicity for educational advertisements, notices, posters or prospectuses; opportunities for personal propaganda work; gifts of books, apparatus and equipment to the schools; remission of overtime; permission to leave early on class nights or to come in later the following morning; special wage increments on receipt of satisfactory school reports; prizes or rewards in money, books or instruments; financial assistance towards tram fares or other incidental expenses; scholarships or other means of access to places of higher study for those who do best in the ordinary classes of the district; library facilities, and convenient rooms set apart for homework. Arrangements such as these, combined in every possible way, form the educational schemes of very many firms. The initiative may have come from the employer himself or from the education authority. Some firms will readily grant one concession and will firmly decline—for reasons of their own—others which appear quite as easy to make.

Of the various towns in which the employers have been induced generally to give the educational authorities substantial moral support, perhaps the most interesting example is furnished by Edinburgh. The Organiser of Continuation Classes to the Edinburgh School Board submits an annual report in which prominence is given to the co-operation of employers and the methods by which it is obtained. One cannot do better than quote a couple of paragraphs from the report dealing with the 1916-17 Session. After reference has been made to war-time restrictions placed upon ordinary advertising, the Organiser states :—

‘The other methods for securing the active co-operation of employers, voluntary agencies, and private individuals were again pursued with the customary satisfactory results. The annual



## THE EMPLOYER'S PART

visitation of employers was begun on September 11, and concluded on October 3. Over 400 visits were made by the Organiser and 101 meetings of workpeople were addressed by Members of the Board.

'In spite of abnormal conditions and dislocation of working arrangements employers continue to take the keenest interest in this propaganda work, and to give freely facilities for holding the meetings in a suitable place and at a suitable time, inside the works, partly in the employer's time, and with a responsible representative of the firm present. In a considerable number of cases a record attendance was secured and great interest was shown in the alterations which the Board had made to suit the changed conditions of the times. Over 1300 pupils had their fees guaranteed—the number of individual guarantors being 100.'

In September 1918 the writer was privileged to attend one of these dinner-hour meetings—the 120th of the season—and came away feeling that if more towns followed Edinburgh's example there would be fewer complaints of the comparative failure of evening classes. Few towns—possibly none—in either England or Scotland can equal Edinburgh's record in regard to the number of continuation school entries as compared with available adolescents living in the district, and this without recourse to compulsory powers.

So much for the part played by employers in evening school work: in the Day Continuation Schools of the future the employer will have infinitely greater opportunities of helpful and constructive co-operation. But let it not be forgotten that, even when all 'young persons' go to day classes, the evening school will still contribute to the programme many additional (voluntary) classes, some of them semi-recreative, for those under eighteen, while those over eighteen, who, in the eyes of the 1918 Education Act, are no longer young, will be mainly dependent on evening classes for whatever studies they wish to pursue.

The evening school may still say 'Resurgam!'

### B. THE CASE FOR THE UNSKILLED WORKER.

Leaving for the moment the apprentice and his preferential treatment in the matter of day classes, we now consider the position of the ordinary boy or girl, engaged in one or other



## THE CASE FOR THE UNSKILLED WORKER

of the repetition jobs which make up so large a proportion of factory work.

Until quite recently few education authorities seemed to make any special arrangements for these young persons: their requirements were seldom discussed by bodies voicing expert educational opinion. In certain quarters it seemed to be held that every boy of intelligence ought to become apprenticed to some skilled occupation and that, if he desired it, he could easily do so. A visit to almost any modern factory ought to disprove this view. Further, it may be submitted that the more monotonous a boy's task, the more imperative the need for suitable education to develop those parts of his intellectual equipment on which his avocation makes such slight demands. Granted good wages with prospects of advancement, reasonable security of employment, short hours and satisfactory working conditions, with an education such that he can spend his leisure profitably, is there any ground for assuming that unskilled labour is either unpopular or undesirable? The experience of the writer, brought into contact with many hundreds of factory youths, all goes to show that unskilled repetition work is, on the average, rather popular than otherwise. Its *desirability* is another and more difficult question. It is important not to lose sight of the mentally numbing effect apparently inseparable from continued close association with automatic machinery, but the business of the continuation school should be to counteract this. It is sometimes urged that the machine minder raises his efficiency to a maximum by becoming as automatic as his machine. Apart from the inhumanity of this view, it may be argued that anyone of undeveloped intelligence, placed in charge of intricate and expensive machinery, is likely to prove—even when regarded from the lowest standpoint—an unprofitable servant. All this may seem to be rather a digression, but, even so, it is suggested by one of the chief themes of this book—namely, that much-neglected subject, the continued education of the unskilled and the semi-skilled.

What has been said of the boys is largely applicable to girls. Perhaps even less effort has been made in the past by education

## THE EMPLOYER'S PART

committees to really *educate* the girl employed in a factory. If she aspired to enter an office she found shorthand classes in abundance with, sometimes, the additional attraction of a little typewriting. If her tastes were domestic she may have joined a class in cookery, dressmaking, or millinery. Elsewhere in this book it is abundantly shown that even the factory girl has ideas on subjects very different from these, and the 1918 Act places their study within her reach.

The question of monotonous work is dealt with in one of the Reports of the Committee on Adult Education. One of those who gave evidence before this Committee put forward an interesting point of view which the following quotation makes fairly clear :

‘ If work of a monotonous sort is excessive, it will dull the wits of elderly men unless the physical motion required becomes purely mechanical and the brain is trained to be active in another direction. . . . It should be possible, if education is continued from the elementary school onward, to make monotonous occupation an educational advantage.’

### C. ATTENDANCE AT CLASSES AS A CONDITION OF EMPLOYMENT.

In 1906 the firm with which the writer is identified made it a condition of employment that all boys and girls connected with the factory should attend an approved evening school course until the close of the session in which their sixteenth birthday occurred ; three years later the age limit was raised to seventeen and in 1910 it was further extended to eighteen—the final figure for all except apprentices, office employees, and a very limited number of others.

The Local Authority provided the classes ; the firm instructed their employees to join, using all their influence to secure regular attendance, and rewarded the students in various ways for steady work, good conduct, and satisfactory progress. The co-operation was fairly complete and worked smoothly. About the same time, or even a few years earlier, several large industrial concerns in other parts of the country had taken similar steps with varying degrees

## ATTENDANCE AT CLASSES

of success. Much has been written and said on both sides regarding this form of compulsory attendance. It has been called by various uncomplimentary names, such as 'Unpaid Overtime' and even 'Educational Conscription.' The latter term was used in the 'School World' some half a dozen years ago by a writer who apparently spoke from unfortunate personal experience. The controversy as between voluntary and compulsory service has, more recently, been worn threadbare in connection with much larger issues and need not be continued here, especially as evening classes now take a subordinate place. One point only should be emphasised, and it is this. Assuming here that other difficulties have been met and that conditions are generally favourable, time—or rather the lack of it—is the fatal weakness in any scheme of compulsory evening school attendance. The total possible hours of attendance during four years, on a two-nights-a-week basis, seldom exceed 400—little more than would be included in one term's work at most secondary schools. This figure also assumes an approximately perfect attendance for 25 weeks or usually one hundred hours per session, while the average number of hours put in by evening class students throughout England is more like 50 per session.

In 1913 the step was taken at Bournville of substituting *Day Continuation Classes* for the previous Evening School system and a new educational experiment commenced.

For the purpose of this chapter, at least, *Day Continuation Schools* are understood to be institutions in which the instruction is of a fairly general type; where provision is made for girls as well as boys, for semi-skilled and unskilled workers, as well as for those learning skilled trades or working in offices. Such schools will show essential differences—in aim as well as in method—from junior technical schools, trade schools, or day technical classes for apprentices. The methods of instruction and of internal organisation are discussed elsewhere and it will be sufficient to say here that, while these may vary between wide limits, they have much in common with those found in secondary, or higher elementary, or central (upper standard) schools.



## THE EMPLOYER'S PART

This chapter, however, has to deal with the employers' side of the matter. Any Local Education Authority proposing to establish Day Continuation Schools, whether on a voluntary basis or backed by statutory powers, would encounter three main practical difficulties. These concern, respectively, the staff, the premises, and the employers of the potential students. The first and the second may be put aside for the moment. In the experiment which forms the main theme of this book the employers instigated the scheme themselves so that the third difficulty did not arise. It must not, however, be thought a simple matter to release about a thousand juniors every week so that they may attend school—even with favourable conditions and the most cordial support from the heads of the firm. In a later section it will be shown how some of the special departmental difficulties can be minimised, but, in the meantime, it may be suggested that the employer and the local authority changed places in this case, the former becoming for the moment the pioneer and the latter readily falling in with the new proposals.

We have had very little data on which to base any theory for the internal organisation or management of part-time day classes for the general worker, conducted on any sort of basis, whether it be voluntary, compulsory, or 'as a condition of employment'—really a form of local compulsion. The number of experiments made has been comparatively small; nor is it likely that any voluntary scheme would ever attain to more than a local or partial application. Without the stimulus of compulsory powers, public opinion is not quite ripe for any general development of this kind: in fact public opinion is apt to be rather critical of the employer who requires attendance as a condition of employment, and even in some cases to suspect that his motives are not disinterested. So it happens that real experience of conducting Day Continuation Schools has only been gained in a very small number of places, but this little store of knowledge will have a greatly enhanced value now that a national scheme has reached the Statute Book.

In those cases where the thing has already been done,



## WORKS DAY CONTINUATION SCHOOLS

some one must have made a definite move—the education authority, the employer, the young employees themselves, or their parents. The last two may be put on one side for the moment as being most unlikely to take any concerted action in this direction: the education authority might plan the school and invite local firms to send the students: the firms might ask for the schools to be provided and notify their boys and girls to attend. Up to the present first steps may be taken much more easily, and have been taken more frequently, by the employer than by anyone else. If the large employer commences, neighbouring smaller firms may find less difficulty in joining and making their contribution of students—more especially if the school is being administered by the local authority and conducted as a public institution. Another argument is thus furnished against the school inside the factory for the exclusive use of those employed therein.

### D. WORKS DAY CONTINUATION SCHOOL OR MUNICIPAL DAY CONTINUATION SCHOOL ?

Several firms at present evolving educational schemes are asking themselves this question: 'Who shall conduct the day classes, the local authority for education or the firm?' The answers to this question vary curiously and are, in some cases, worth studying. One concern will run its boys' classes itself, but will allow the Education Authority to look after the girls' classes. A second firm will do exactly the opposite. Another would like a position of complete autonomy, cut off from both rate aid and Board of Education, but the 1918 Act requires inspection by either the Board of Education or the Local Education Authority. A firm taking the third view—provided their educational ideals are sufficiently high—will have a magnificent opportunity of doing really pioneer work which ought to live, with the minimum of inspection or external interference. The additional cost involved to such a firm will be partly balanced by simplicity of arrangement and management. The school buildings will belong to the firm; the teachers will be their employees;

## THE EMPLOYER'S PART

the hours of opening and the dates of holidays can be conveniently adjusted to meet works arrangements; the educational scheme can be closely co-ordinated with other forms of social or welfare work; dislocation generally can be reduced to a minimum. It may also be argued that a continuation school in a works is a convenient corporate unit in which a civic spirit is readily cultivated.

‘Now we advocate Education, not merely to make the man the better workman, but the workman the better man,’ said Sir John Lubbock twenty years ago. If those responsible for such a ‘Works School’ have, consciously or unconsciously, taken this as their motto, as is undoubtedly the case in some instances, this plan may work to the advantage of all concerned—but it is a big ‘if.’ Should the object of such classes, run by any individual firm, be summed up in the word ‘output,’ then the whole idea is fundamentally wrong and the classes should not be recognised as Day Continuation Schools within the meaning of the Act. A compromise—or rather a combination—which has much to recommend it is that all continued education which is quite general in its character should be administered by the local authority, inspected and assisted by the State and aided, if necessary, from the education rates of the district. General education is, or ought to be, a marketable as well as a portable commodity, which the continuation school student may take with him from one employer to another. It is, in fact, a national rather than a personal asset. It is therefore reasonable to ask that it shall be provided from public funds. On the other hand, instruction in methods or processes practised only by one factory in the district may quite well be given within the factory by experts in the employment of the firm. In fact this is probably the best way of providing highly specialised instruction, but such teaching should be supplementary to the work of the general Day Continuation School, and should not, to any extent, replace it. Just as it is hardly the duty of the ratepayer to provide technical training which will benefit one employer almost exclusively, so it is not—or at least should not be—the employer’s business to undertake

## WORKS DAY CONTINUATION SCHOOLS

educational work of a perfectly general kind, though some firms have found themselves compelled to do this. A division of responsibility on the lines here suggested is quite equitable and experience has shown that a Works Educational Scheme can be satisfactorily built up on such a twofold basis. (One criticism brought against this view is that general and vocational education can best be co-ordinated if they are undertaken by the same authority, but this argument hardly applies to any except skilled workers.)

There is also a further point of view. Change of environment from factory to school should prove beneficial, and intercourse with employees of another firm attending the same classes has its own educational value. Conversation, at the age in question, is largely a comparison of personal experiences and an interchange of views on daily work and daily grievances—half-formed views no doubt, and crudely expressed, but none the less sincere. It is all to the good, and makes for breadth of outlook, that students doing different kinds of work, under employers and foremen of varying calibre, should meet under common conditions (not only in the same day school, but in the corporate life of the school as well) and should be brought to realise that grievances are confined to no one factory. This is especially the case if such subjects as Citizenship, Industrial History, Factory Legislation, the Whitley Report, &c., are studied, and if the method of debate or discussion is employed in teaching them. Similar reasons might be given why all those who contemplate teaching in a particular town, for instance, should not be educated in one and the same training college.

As Day Continuation School Schemes are commenced in increasing numbers by various firms and groups of firms, it becomes evident that there will be no clear line of demarcation between Works Schools and the other variety. Co-operation and division of responsibility have already appeared in quite a variety of forms. For example, there are several cases where teachers supplied by the Education Authority carry on a school in a building provided by the firm—even, in some cases, inside the factory itself. There are also



## THE EMPLOYER'S PART

examples in which some members of the staff are employed by the firm and others by the Education Authority, and there are even instances in which the grant received by the Education Authority is partly or entirely handed over to the firm. It thus becomes a little difficult to define exactly the term 'Works Day Continuation School.'

If space permitted it could be shown that even when the general education of those under eighteen has been provided for—by the Local Education Authority, if you will—there is still plenty of other educational activity open to the enterprising employer who is prepared to carry on a Works School. The training of apprentices, trade and office classes, semi-recreative classes of all kinds—anything, in fact, which the employees of the firm sufficiently desire—can well be included in the programme of the Works School. The 'Camp School,' described in another chapter, is a case in point. Added to these is the whole question of the selection of employees by educational tests or on educational grounds, a matter which in most factories and business houses has hardly yet begun to be thought of.

Apropos of selection by tests may be mentioned the simple examination set by the Works Education Department to the boys applying for employment, some of whom afterwards make their appearance in the classes described in Chapters IV to VII. This examination serves various purposes. It shows, of course, which boys should not be taken on at all, but it is also a valuable factor in the classification of those employed when they are drafted into the Day Continuation School, and into various parts of the factory.

There is no room in this volume for even a selection of the quaint things sent in on these occasions, but one *must* express some curiosity as to the subsequent historical studies of the youth who assured the writer that 'Lord Kitchener was a famous Admiral, who won the battle of Waterloo.'

Undoubtedly the entrance examination for new employees is quite a useful institution, but something of much greater importance and value than an examination can be devised to form a connecting link between the school and the factory.



## SOME PRACTICAL POINTS

The experiment of a Preparatory or Initiation School has been tried, having been brought within the limits of practicability by the new arrangement under which boys and girls leave the Day School at the end of the term only. A group of boys or girls, newly taken on, constitutes for—say—a week this Preparatory School. The pupils receive guidance on many matters referring to their future work, on health, cleanliness, use of leisure, works institutions, what to do and what to avoid—the instruction being as practical and realistic as possible. The lantern and the kinematograph may be brought into use, together with illustrative visits to show the chief processes carried on in the factory, the nature and sources of the raw materials, the properties and ultimate destinations of the finished products. While the girls learn to cut out their working overalls, the boys can be making plans of some simple parts of the building (from measurements taken by themselves). The time-table is varied by organised games, and observations which will bring out some of the main characteristics of the boy or girl. Should there be a superfluity of labour at the beginning of the new school term, this Preparatory School may with advantage be continued, on a diminishing scale, and on a part-time basis, for several weeks, thus forming a reserve to be drawn upon as required. Experience already gained seems to indicate that boys and girls enjoy this school. The premises of the Youths' Club and the Girls' Club can be readily adapted for the purpose, while a generously staffed factory has no difficulty in providing the necessary teachers. Of course, the pupils are paid for the time spent in this way, and the Preparatory School is distinct in every way from the Continuation School.

### E. SOME PRACTICAL POINTS IN WHICH THE WORKS EDUCATION DEPARTMENT HELPS THE CONTINUATION SCHOOL.

Speaking generally of the relation between the Day Continuation School and the employer it may be stated emphatically that time and trouble are well spent on friendly

## THE EMPLOYER'S PART

co-operation and the adjustment of difficulties and grievances on both sides, especially at the beginning of each school term. Any reasonable employer or foreman wishes the boys or girls to benefit as much as possible from attendance at school, as an indirect compensation for the encroachments made on the working week. The classification of Day Continuation School students into groups or sections may easily become complicated. It should not be entirely on the basis of educational attainment: age and temperament come into it also. One Standard VII boy of fourteen may be a child when compared with another of similar standard and age, whose additional stock of worldly wisdom has not been acquired altogether at school. It follows that, for a variety of reasons, there should be numbers of classes, approximately parallel in attainment but differing somewhat in other respects and meeting at various parts of the school week. Incidentally this segregation into groups often allows the head master or head mistress to offer the employer alternative times for the attendance of a particular student—a point of the utmost value, but one which can only be fully developed if the school is of fair size, say 400 or 500 students. Most differences in the placing of a boy or girl can be readily adjusted by a little compromise on both sides, but there is always the danger that the student's prospect of successful study may be compromised as well.

Adolescent girls seem to be peculiarly susceptible to accelerating or retarding influences caused by class environment, and we must generally reckon with the girl who steadily refuses to do her best unless her particular friend—for the moment—is in the same class.

What is the best way of dividing up our eight hours per week? To this question there can be no general answer, because so much depends on the nature of the industry in which the students are engaged, and on the mode of organisation of the school. The three main suggestions are: (a) one full day per week of approximately eight hours' study; (b) two half-days per week; (c) several shorter periods. In a general manufacturing concern it is quite likely that arrangement (a) causes less dislocation than any other. It is, how-

## SOME PRACTICAL POINTS

ever, educationally bad and only under exceptional circumstances (for example, in the case of students who work in a very dirty industry) should it be permitted. On the other hand, arrangement (c) causes unnecessary interruption to work in most factories, but in a distributing business, such as a large retail warehouse—probably also in a small shop—where there are slack times on most days of the week, it is quite a convenient arrangement. This is true, particularly if the school is on the same premises as the business, so that walking time and changing time are minimised. For the *average* student and *average* employer there seems no doubt that arrangement (b)—two distinct half-days per week—is more advantageous than any other. (Rural schools are not considered here.)

Should the Local Authority of the district decide to arrange its schools on a residential rather than an industrial basis, the position is somewhat different and then arrangement (a) has more to recommend it; but in most towns it will be found better to distribute the Day Continuation School students geographically according to their places of employment rather than according to their places of residence.

A simple mode of procedure which has been found helpful may be mentioned here.

At the beginning of each session, in a school already established, it is well for the head master or head mistress to be furnished by the employer with a complete list of juniors who will attend school, the list to be arranged departmentally and freely annotated. The notes will cover as many as possible of the special departmental and personal difficulties, even apparently trivial points being worth mentioning. To take actual examples, we find such remarks as 'Jane Smith and Susan Jones should attend on different days, if at all possible'; 'It upsets the work of this department if boys go to school on Friday morning'; 'Morning school preferred in this room'; and so on. Some three weeks before the commencement of the Autumn term this list goes to the head master or head mistress, then in the throes of planning time-tables. In, say, a week the list of classes or sections for each half-day comes to the



## THE EMPLOYER'S PART

Works Education Office, where it is analysed departmentally and tabulated. A sectional list in ten columns to correspond with the ten half-days is issued to each foreman or forewoman. The following is extracted from the covering letter sent with this table, as it reflects the spirit in which the arrangements are made between the school and the heads of departments, with the Works Education Office as a sort of clearing house.

'We have recently supplied to the Day Continuation School a list of juniors in your Department, together with notes on how the girls could best be spared and on cases where it was difficult for two or more individual girls to attend together. While the classification has to be mainly on educational grounds an effort has been made to meet departmental difficulties. The lists of classes have now been received and the proposed time-table for your Department is sent herewith. If it is very inconvenient to spare any of the girls at the times stated, please communicate at once with the Works Education Department. Any alteration generally means placing a girl in a section which is less suitable for her than the one stated on the enclosed list.'

To minimise the inconvenience caused by all juniors in factory, or in a certain department of a factory, leaving work to attend school, there is no single universal remedy. Each factory, and even each department, has its own peculiar difficulties in this matter, which may be more or less removed by methods applicable to particular cases. A few illustrative cases may be taken. Department 'A' has eleven girls of day school age, but three are described as 'Head girls on machines' and no two of these can be spared out of the department at the same time: the other eight may, within reasonable limits, attend at any time. Department 'B' has forty-four girls in nineteen groups and no two from any one group may attend at the same time; there are also twenty-three other girls who can themselves be spared for school at almost any part of the week and whose duty it is to understudy girls in these nineteen groups and fill the vacancies caused by absence from the department. Another department, again, has ninety-six juniors, but it makes little difference to their work when they go to school, so long as the distribution throughout the week is fairly uniform. Special features are shown in departments



## SOME PRACTICAL POINTS

where boys as well as girls are of school age ; where work must be entirely cleared up by the week-end to avoid deterioration of unfinished goods during Saturday afternoon and Sunday ; where a fall in output keeps another department waiting ; where a junior habitually assists a senior ; or where boys and men work together in groups or gangs and the work of the latter is held up by the absence of the former.

A system of relief boys or relief girls may have to be established and, if the factory is a large one, a possible method is to staff one department mainly with young boys or girls who can spend part of their week in other departments, taking the place of those who have gone to school. Of course the work of the relief room itself must be such that no serious loss is caused by a daily fluctuation in the staff. For instance, it had better be a department where the juniors work individually and not in groups. Some firms, having tried this plan, declare that it is not at all a desirable arrangement.

It has frequently happened—especially during the War—that in a room a particular operation can only be carried out by boys who have reached a certain height or a certain standard of physical development or intelligence. This is of common occurrence among boys in their last year of attendance at school, i.e., between seventeen and eighteen. (In the experiment here described each student who has not become eighteen before January 1 of a given year continues to attend school until July of that year, though in the case of boys this rule was temporarily modified by the operations of the Military Service Acts : Clause 10 of the Education Act provides differently and assumes that the fourth year of attendance at the Day Continuation School may be an incomplete school year.) If there are, say, three such youths in a room it is probably too much to expect the foreman to release all three, or even two of them, for school at once, but he can probably manage with two working while one at a time goes to school.

In this connection it would be very interesting to follow out the case of the small employer, particularly in the case of the shopkeeper with only one or two juniors in his employment, or the mistress of a house with only one young domestic

## THE EMPLOYER'S PART

servant. In the Education Act, apparently power is given to the Local Authority not merely to specify the school which the student shall attend, but also to state definitely the particular hours or half-days of attendance. In many instances this will cause extreme inconvenience if the Local Education Committee takes full advantage of its powers without in any way consulting the employer. In very many cases there will be certain half-days much more suitable than others from the employer's point of view, and a little toleration on both sides will do much to ensure that the employer is a sympathetic co-operator in the working of the Act and not a passive resister. At the same time it should be expressly stipulated that one of the two half-days should in all cases be a morning. Anyone who has had experience of teaching in a Day Continuation School knows how much better the work is done during a morning than during an afternoon, when the boy or girl has already put in four or five hours in the shop or factory—possibly with a special stimulus to activity on that half-day, 'because you go to school this afternoon.'

As the general movement towards a shorter working week proceeds, it will be found more and more that the afternoon half-day at school finishes at an hour later than that at which many places of employment have closed for the day. For example, in a factory with a 44-hour week junior employees may in the ordinary course go home at 5 o'clock. If an adequate mid-day interval is allowed and the afternoon classes commence at—say—1.45, they will naturally terminate at 5.45. Should the students be paid for the additional three-quarters of an hour or should they have time off at some other part of the day to compensate, or should they themselves make this comparatively small contribution towards the time given for study?

It is of the utmost importance that an employer should receive daily returns of absence and lateness, and on the form used for this purpose space should be left for special comments or suggestions. It is the duty of the Works Education Department to deal with these returns immediately they are received, to investigate the reasons for absence or unpunctuality, and

## SOME PRACTICAL POINTS

report within a day or two to the head master or head mistress of the school.

Terminal or yearly reports are also essential if intimate co-operation is to be maintained between the firm and the school. These may be expressed partly in numerical form, giving the details of marks gained for term work, home work and examinations (examination marks should not appear too largely in the total, and should not exceed twenty-five per cent. of the whole), and partly in verbal criticisms which represent the collective opinion of the members of the school staff.

If the school report is to be of any value it must be fully made use of by the employer, and this can be done in several ways. First: if there should be any system of rewards or prizes given by the firm, this should be in a great measure based on the school reports, combined, if thought fit, with departmental reports. The latter, however, are apt to be fallacious, because the foreman or forewoman, although probably quite a competent head of his or her department, is not usually skilled in assessing merit on a numerical basis, and furthermore, the standard is apt to vary enormously between one department and another. A very kind-hearted foreman has been known to give everyone in his shop full marks, which is clearly unfair to the juniors who work for more discriminating heads. A perfectly fair and equitable basis for a general reward scheme is difficult to discover, because all sorts of allowances have to be made for age, occupation, temperament, environment, and the personal equation of the head of the department.

Of course, many educationists entirely condemn rewards of this kind, but if the reward takes the form of time and opportunity for more extended study surely most critics will be disarmed.

A second method of utilising school reports is to have them produced whenever wages are revised or selections made for more desirable posts. This method operates more through the association of ideas than in any direct way. It is well for progress at school and advancement at work to be linked up in the minds of the students. A third method, applicable to



## THE EMPLOYER'S PART

small groups of employees, and particularly to those who have received bad reports, is for the works educational official and the head of the student's department to talk over with the student the special points in his report and indicate possible improvement.

Conduct, as well as progress, may very well come under review on these occasions; in fact this is one of the most efficient methods by which the employer can help the head of the school in maintaining a satisfactory standard of discipline and behaviour.

The staff of the school and also the firm's representatives should be in frequent communication regarding boys or girls who do not seem to be happily placed as regards their work, or who show exceptional ability in some particular direction, or who seem worthy of appointment to some more desirable position, such as apprenticeship to a skilled trade. The Works Doctor can often be called into consultation with great advantage, especially at the present time when medical inspection of schools is not extended to Day Continuation Schools. Exemptions from home work, or from physical training, or even in rare cases from attending school altogether, may be granted on the doctor's recommendation.

If a promising student has been discovered, either by the school staff or by the Works Education Department, he or she should receive every encouragement. This may sometimes take the form of additional time at school, to enable the student to do more advanced work. In two actual cases, youths of about seventeen years of age were granted permission to attend (without loss of wages) continuation school on five half-days per week, instead of two, from January to Midsummer. As a direct result of this special arrangement both students were successful in passing the intermediate examination for the B.Sc. degree of Birmingham University. Probably few persons realise the standard to which it is possible to raise the work of Day Continuation Schools, granted sufficient time and a well-qualified and enthusiastic staff. Closely connected with arrangements such as this, there is the offer of scholarships to places of higher education, and these places are not necessarily technical schools. On the



## SOME PRACTICAL POINTS

contrary, they may be colleges or settlements for higher study of quite non-vocational character, and even colleges of university rank. Co-operation with the Workers' Educational Association may well be undertaken at this stage.

In many matters affecting the *management* of a Day Continuation School it is reasonable to expect that firms keenly interested in education—and there are plenty of such firms—will wish to have some voice. To give effect to this, the Local Authority can readily co-opt representatives of these firms on the Bodies of Managers or Visitors, or on some Advisory Committee or Continuation School Sub-Committee.

On details of curriculum the teachers may with advantage consult the firms contributing large numbers of students, more especially as many industrial concerns have now at their disposal the services of experienced educational officials. There is no reason to fear that the advice of the employer will, in the vast majority of cases, be other than helpful. The more thoroughly the school and the employer appreciate one another's points of view, the better for all parties concerned, students included.

The critical reader of this chapter will doubtless say that all these arrangements demand from the employer much expenditure of time and money; this is quite true. In the scheme described in this volume the employers' part occupies the services of a full-time education official (acting in conjunction with a Works Education Committee) and an education office staff, comparable with that required for the higher education of a moderate-sized town. But if the thing is worth doing at all it is worth doing well, and the opinion is steadily taking form among progressive employers that a highly organised educational scheme is an important and even essential adjunct to a large modern business. It would be interesting to follow the question up in two directions: first, to see how the work of the Day Continuation School can be supplemented by vocational and other specialised classes in the Works School; second, to discuss provision made for further educating employees of all ages, but these two subjects are probably outside the scope of this book.



# APPENDICES





## APPENDIX I

### EXTRACTS FROM THE EDUCATION ACT, 1918

*(England and Wales)*

*Section 3.*—(1) It shall be the duty of the local education authority for the purposes of Part II. of the Education Act, 1902, either separately or in co-operation with other local education authorities, to establish and maintain, or secure the establishment and maintenance under their control and direction, of a sufficient supply of continuation schools in which suitable courses of study, instruction, and physical training are provided without payment of fees for all young persons resident in their area who are, under this Act, under an obligation to attend such schools.

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(2) For the purposes aforesaid the local education authority from time to time may, and shall when required by the Board of Education, submit to the Board schemes for the progressive organisation of a system of continuation schools, and for securing general and regular attendance thereat, and in preparing schemes under this section the local education authority shall have regard to the desirability of including therein arrangements for co-operation with universities in the provision of lectures and classes for scholars for whom instruction by such means is suitable.

(3) The council of any county shall, if practicable, provide for the inclusion of representatives of education authorities for the purposes of Part III. of the Education Act, 1902, in any body of managers of continuation schools within the area of those authorities.

*Section 10.*—(1) Subject as hereinafter provided, all young persons shall attend such continuation schools at such times, on such days, as the local education authority of the area in which they reside may require, for three hundred and twenty hours in each year, distributed as regards times and seasons as may best suit the circumstances of each locality, or, in the case of a period of less than a year, for such number of hours distributed as aforesaid

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## APPENDICES

as the local education authority, having regard to all the circumstances, consider reasonable :

Provided that—

(a) the obligation to attend continuation schools shall not, within a period of seven <sup>1</sup> years from the appointed day on which the provisions of this section came into force, apply to young persons between the ages of sixteen and eighteen, nor after that period to any young person who has attained the age of sixteen before the expiration of that period ; and

(b) during the like period, if the local education authority so resolve, the number of hours for which a young person may be required to attend continuation schools in any year shall be two hundred and eighty instead of three hundred and twenty.

(2) Any young person—

(i) who is above the age of fourteen years on the appointed day ; or

(ii) who has satisfactorily completed a course of training for, and is engaged in, the sea service, in accordance with the provisions of any national scheme which may hereafter be established, by Order in Council or otherwise, with the object of maintaining an adequate supply of well-trained British seamen, or, pending the establishment of such scheme, in accordance with the provisions of any interim scheme approved by the Board of Education ; or

(iii) who is above the age of sixteen years and either—

(a) has passed the matriculation examination of a university of the United Kingdom or an examination recognised by the Board of Education for the purposes of this section as equivalent thereto ; or

(b) is shown to the satisfaction of the local education authority to have been up to the age of sixteen under full-time instruction in a school recognised by the Board of Education as efficient or under suitable and efficient full-time instruction in some other manner,

shall be exempt from the obligation to attend continuation schools under this Act unless he has informed the authority in writing of his desire to attend such schools and the authority have prescribed what school he shall attend.

(3) The obligation to attend continuation schools under this Act shall not apply to any young person—

(i) who is shown to the satisfaction of the local education authority to be under full-time instruction in a school recognised

<sup>1</sup> Three years in the Scotch Act.

## APPENDIX I

by the Board of Education as efficient or to be under suitable and efficient full-time instruction in some other manner ; or

(ii) who is shown to the satisfaction of the local education authority to be under suitable and efficient part-time instruction in some other manner for a number of hours in the year (being hours during which if not exempted he might be required to attend continuation schools) equal to the number of hours during which a young person is required under this Act to attend a continuation school.

(4) Where a school supplying secondary education is inspected by a British university, or in Wales or Monmouthshire by the Central Welsh Board, under regulations made by the inspecting body after consultation with the Board of Education, and the inspecting body reports to the Board of Education that the school makes satisfactory provision for the education of the scholars, a young person who is attending, or has attended, such a school shall for the purposes of this section be treated as if he were attending, or had attended, a school recognised by the Board of Education as efficient.

(5) If a young person who is or has been in any school or educational institution, or the parent of any such young person, represents to the Board that the young person is entitled to exemption under the provisions of this section, or that the obligation imposed by this section does not apply to him, by reason that he is or has been under suitable and efficient instruction, but that the local education authority have unreasonably refused to accept the instruction as satisfactory, the Board of Education shall consider the representation, and, if satisfied that the representation is well founded, shall make an order declaring that the young person is exempt from the obligation to attend a continuation school under this Act for such period and subject to such conditions as may be named in the order :

Provided that the Board of Education may refuse to consider any such representation unless the local education authority or the Board of Education are enabled to inspect the school or educational institution in which the instruction is or has been given.

(6) The local education authority may require, in the case of any young person who is under an obligation to attend a continuation school, that his employment shall be suspended on any day when his attendance is required, not only during the period for which he is required to attend the school, but also for such other specified part of the day, not exceeding two hours, as the authority consider necessary in order to secure that he may be in a fit mental



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and bodily condition to receive full benefit from attendance at the school: Provided that, if any question arises between the local education authority and the employer of a young person whether a requirement made under this subsection is reasonable for the purposes aforesaid, that question shall be determined by the Board of Education, and, if the Board of Education determine that the requirement is unreasonable, they may substitute such other requirement as they think reasonable.

(7) The local education authority shall not require any young person to attend a continuation school on a Sunday, or on any day or part of a day exclusively set apart for religious observance by the religious body to which he belongs, or during any holiday or half-holiday to which by any enactment regulating his employment or by agreement he is entitled, nor so far as practicable during any holiday or half-holiday which in his employment he is accustomed to enjoy, nor between the hours of seven in the evening and eight in the morning: Provided that the local education authority may, with the approval of the Board, vary those hours in the case of young persons employed at night or otherwise employed at abnormal times.

*(Works  
Schools.)*

(8) A local education authority shall not, without the consent of a young person, require him to attend any continuation school held at or in connection with the place of his employment. The consent given by a young person for the purpose of this provision may be withdrawn by one month's notice in writing sent to the employer and to the local education authority.

Any school attended by a young person at or in connection with the place of his employment shall be open to inspection either by the local education authority or by the Board of Education at the option of the person or persons responsible for the management of the school.

(9) In considering what continuation school a young person shall be required to attend a local education authority shall have regard, as far as practicable, to any preference which a young person or the parent of a young person under the age of sixteen may express, and, if a young person or the parent of a young person under the age of sixteen represents in writing to the local education authority that he objects to any part of the instruction given in the continuation school which the young person is required to attend, on the ground that it is contrary or offensive to his religious belief, the obligation under this Act to attend that school for the purpose of such instruction shall not apply to him,



## APPENDIX I

and the local education authority shall, if practicable, arrange for him to attend some other instruction in lieu thereof or some other school.

*Section 11.*—(1) If a young person fails, except by reason of sickness, or other unavoidable cause, to comply with any requirement imposed upon him under this Act for attendance at a continuation school, he shall be liable on summary conviction to a fine not exceeding five shillings, or, in the case of a second or subsequent offence, to a fine not exceeding one pound.

Enforcement of attendance at continuation schools.

(2) If a parent of a young person has condoned to or connived at the failure on the part of the young person to attend a continuation school as required under this Act, he shall, unless an order has been made against him in respect of such failure under section ninety-nine of the Children Act, 1908, be liable on summary conviction to a fine not exceeding two pounds, or, in the case of a second or subsequent offence, whether relating to the same or another young person, to a fine not exceeding five pounds.

*Section 12.*—(1) The Board of Education may from time to time make regulations prescribing the manner and form in which notice is to be given as to the continuation school (if any) which a young person is required to attend, and the times of attendance thereat, and as to the hours during which his employment must be suspended, and providing for the issue of certificates of age, attendance and exemption, and for the keeping and preservation of registers of attendance, and generally for carrying into effect the provisions of this Act relating to continuation schools.

Administrative provisions relating to continuation schools.

(2) For the purposes of the provisions of this Act relating to continuation schools, the expression 'year' means in the case of any young person the period of twelve months reckoned from the date when he ceased to be a child, or any subsequent period of twelve months.

*Extract from Section 17.*—For the purpose of supplementing and reinforcing the instruction and social and physical training provided by the public system of education, \* \* \* \* \* a local education authority \* \* \* \* \* may, with the approval of the Board of Education, make arrangements to supply or maintain \* \* \* \* \*

Power to promote social and physical training.

(a) holiday or school camps, especially for young persons attending continuation schools ;

(School Camps or Camp Schools.)

(b) centres and equipment for physical training, playing-fields, \* \* \* \* \* school baths, school swimming-baths ;

(c) other facilities for social and physical training in the day or evening.

## APPENDICES

### APPENDIX II

#### LIST OF BOOKS

which have been found useful in the Bournville Girls' Day Continuation School and to which reference is made in the chapter by Miss A. E. Cater.

#### ARITHMETIC

| <i>Title</i>                                | <i>Author</i>           | <i>Publisher</i> |
|---|-------------------------|------------------|
| Shilling Arithmetic                         | Pendlebury and Robinson | Bell             |
| Housecraft Arithmetic                       | Mellor and Pearson      | Longmans         |
| Ross' Home Arithmetic                       | K. Ross                 | Pitman           |
| Household Accounts                          | Deakin and Humphreys    | Mills & Boon     |
| Collins' Practical Arithmetic               | Pendlebury              | Collins          |
| Commercial Arithmetic and Accounts I and II | Palmer and Stephenson   | Bell             |
| Pitman's Commercial Arithmetic              | ...                     | Pitman           |

#### ENGLISH

The following of Shakespeare's Plays (Blackie's edition): 'Merchant of Venice,' 'As You Like It,' 'Midsummer Night's Dream,' 'Twelfth Night,' 'Julius Caesar,' 'Coriolanus,' 'King Lear,' 'Macbeth,' 'Hamlet,' 'The Tempest,' 'Richard II,' 'Henry V.'

George Eliot's 'Adam Bede,' 'Mill on the Floss' (Collins' edition), and 'Silas Marner' (Nelson edition).

Tennyson's ('Everyman' edition): 'Enoch Arden,' 'The Coming and Passing of Arthur,' 'Geraint and Enid,' 'Lancelot and Elaine,' 'Guinevere,' Shorter Poems.

Longfellow's (Blackie): 'Evangeline,' 'Courtship of Miles Standish,' 'Hiawatha,' Shorter Poems.

Dickens' (Collins): 'Tale of Two Cities,' 'Oliver Twist.'

## APPENDIX II

| <i>Title</i>   | <i>Author</i>                 | <i>Publisher</i> |
|--|-------------------------------|------------------|
| Cranford   | Mrs. Gaskell                  | Collins          |
| The Heroes   | Chas. Kingsley                | "                |
| The Land of Heart's<br>Desire                                | Yeats                         | Unwin            |
| Selections from the<br>writings of Robert<br>Louis Stevenson | Edited S. G. Dunn             | Longmans         |
| News from Nowhere  | William Morris                | "                |
| Sohrab and Rustum  | Matthew Arnold                | Blackie          |
| Atalanta's Race  | William Morris                | Longmans         |
| Milton's Poems<br>(World's Classics)                         | ...                           | Henry Frowde     |
| Browning's Poems<br>(World's Classics)                       | ...                           | "                |
| Lady of the Lake   | Scott                         | Nelson           |
| Quentin Durward  | "                             | Collins          |
| Kenilworth   | "                             | Nelson           |
| Ivanhoe  | "                             | "                |
| Talisman   | "                             | "                |
| Palgrave's Golden<br>Treasury                                | ...                           | Humphrey Milford |
| The Harp of Youth<br>(Selected Poems)                        | ...                           | Nelson           |
| Ancient Mariner  | Coleridge                     | Blackie          |
| Hundred Best Poems<br>for the Young                          | Selected by Adam<br>L. Gowans | Gowans & Gray    |
| Selected Essays  | E. Lee                        | Arnold           |
| Sesame and Lilies  | Ruskin                        | Macmillan        |
| Masters of English<br>Literature                             | Stephen Gwynn                 | "                |
| Arnold's Composition<br>Lessons                              | ...                           | Arnold           |
| Arnold's Language<br>Lessons                                 | ...                           | "                |
| Elementary Lessons in<br>English Composition                 | Nesfield                      | Macmillan        |
| Examples in Compo-<br>sition                                 | Kenney                        | Arnold           |
| Exercises in Précis<br>Writing                               | ...                           | W. Modlen        |
| English Composition  | Bewsher                       | Bell             |

## APPENDICES

| <i>Title</i>          | <i>Author</i>      | <i>Publisher</i>    |
|-----------------------|--------------------|---------------------|
| Dictionary (A Modern) | ...                | Macmillan           |
| Word-Building         | Wood               | "                   |
| Abraham Lincoln       | Drinkwater         | Sidgwick & Jackson  |
| Strife                | John Galsworthy    | Duckworth & Co.     |
| Four Feathers         | A. E. W. Mason     | Nelson              |
| Mrs. Wiggs            | A. H. Rice         | Hodder & Stoughton  |
| Richard Carvel        | Winston Churchill  | Macmillan           |
| Lysbeth               | H. Rider Haggard   | Longmans            |
| Alice in Wonderland   | Lewis Carroll      | Macmillan           |
| Antigone              | Sophocles (trans.) | Novello, Ewer & Co. |

### HISTORY

#### *(Social and Industrial)*

|                              |                 |                                   |
|------------------------------|-----------------|-----------------------------------|
| Our Story                    | Isa Nicholson   | Co-operative Union,<br>Manchester |
| The People in Making         | Stanley Leathes | Heinemann                         |
| The People in Adventure      | "               | "                                 |
| Social History of<br>England | Guest           | Bell                              |
| Factory Act                  | ...             | ...                               |
| Girl in the Home             | ...             | Collins                           |
| Fanny Burney                 | Anne R. Ellis   | Bell                              |
| Evelina                      | F. Burney       | "                                 |

#### *(Colonial)*

|                                      |               |                   |
|--------------------------------------|---------------|-------------------|
| Survey of British<br>Empire          | ...           | Blackie           |
| Growth of Greater<br>Britain         | F. B. Kirkman | "                 |
| Outline History of<br>British Empire | Woodward      | Camb. Univ. Press |

#### *(General)*

|                            |                    |         |
|----------------------------|--------------------|---------|
| From Serf to Ruler         | ...                | Collins |
| Reign of Queen Victoria    | Holland Rose       | Blackie |
| The Welding of the<br>Race | Compiled by Wallis | Bell    |
| Green's History, Pt. I     | ...                | Dent    |



## APPENDIX II

| <i>Title</i>               | <i>Author</i>   | <i>Publisher</i> |
|----------------------------|-----------------|------------------|
| Green's History, Pt. II    | ...             | Dent             |
| Outline of British History | Innes           | Rivingtons       |
| Puck of Pook's Hill        | Rudyard Kipling | Macmillan        |

### *(European)*

|                       |           |         |
|-----------------------|-----------|---------|
| Europe since Napoleon | E. Levett | Blackie |
| Europe and its People | Palmer    | "       |

### *(Modern Problems)*

|                              |                       |                  |
|------------------------------|-----------------------|------------------|
| Two Heroines                 | Edited by Andrew Lang | Collins          |
| Eminent Women                | ...                   | "                |
| Story of Birmingham's Growth | Wm. Moughton          | Moughton & Davis |
| More's Utopia                | ...                   | Macmillan        |

### *(History of Education)*

|                    |     |     |
|--------------------|-----|-----|
| Education Bill (2) | ... | ... |
| Education Act      | ... | ... |

## FRENCH

|                              |                   |        |
|------------------------------|-------------------|--------|
| Mes Premiers Pas en Français | Capuzet & Daniels | Harrap |
| La Journée d'un Petit Lycéen | A. Auzas          | "      |
| Le Bourgeois Gentil-homme    | Molière           | "      |

## PHYSIOLOGY

|                          |                       |                                |
|--------------------------|-----------------------|--------------------------------|
| Physiology Chart         | ...                   | ...                            |
| Physiology for Beginners | Leonard Hill          | Arnold                         |
| Our Baby                 | Mrs. J. Langton Hewer | John Wright & Son, Ltd.        |
| First Aid (St. John)     | ...                   | St. John Ambulance Association |

## APPENDICES

| <i>Title</i>               | <i>Author</i>     | <i>Publisher</i>               |
|----------------------------|-------------------|--------------------------------|
| Sick Nursing (St. John)    | ...               | St. John Ambulance Association |
| Health of Working Girls    | Dr. Beatrice Webb | Blackie                        |
| The Training of the Child  | G. Spiller        | Jack                           |
| Towards Racial Health      | March             | Routledge                      |
| Dawn of Character          | Mrs. Mumford      | Longmans                       |
| Feeding and Care of Babies | ...               | Macmillan                      |
| Handbook for Nurses        | Watson            | Scientific Press               |

### GEOGRAPHY

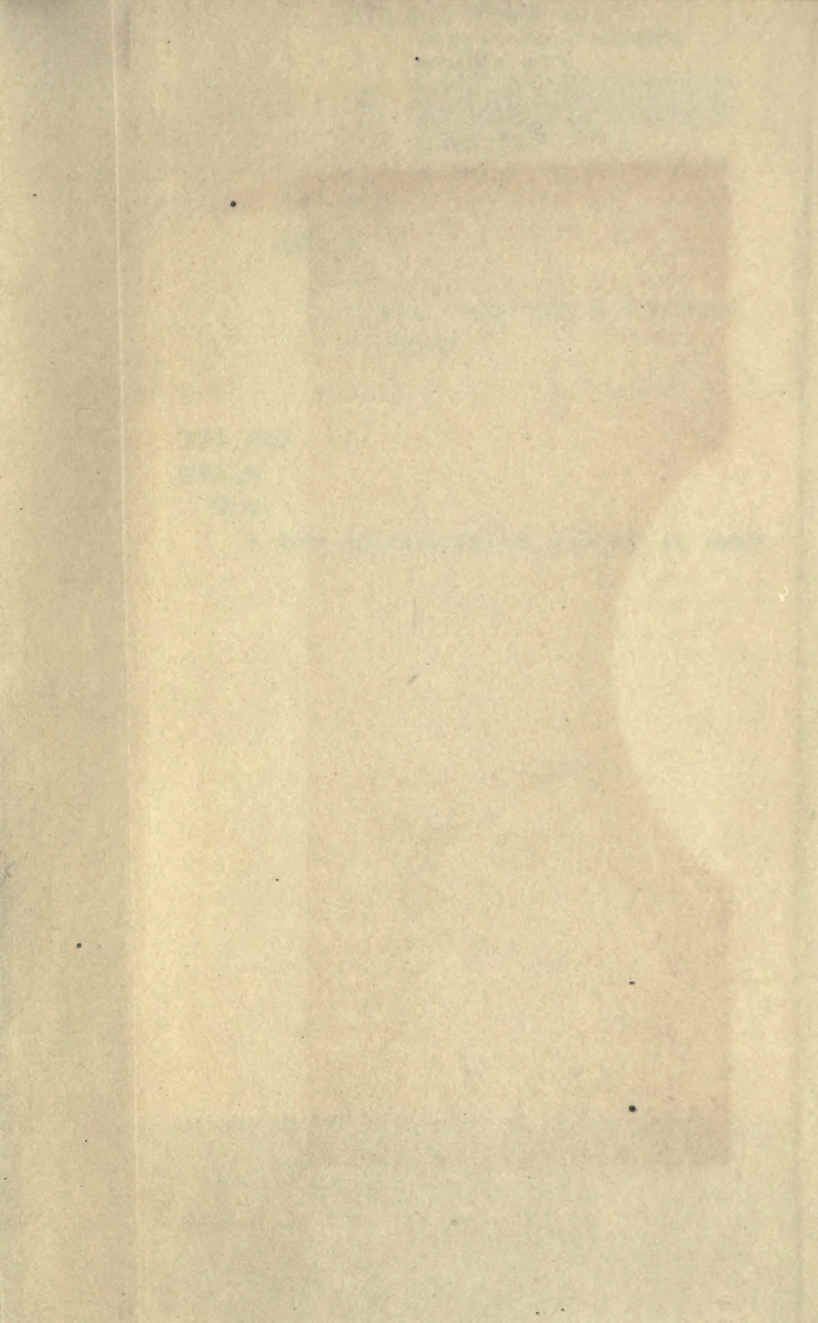
|                                       |            |                   |
|---------------------------------------|------------|-------------------|
| Commercial Geography of British Isles | Herbertson | Chambers          |
| Herbertson's Senior                   | „          | Oxford University |
| Man and his Work                      | „          | Black             |
| Time-tables (Railway)                 | ...        | ...               |

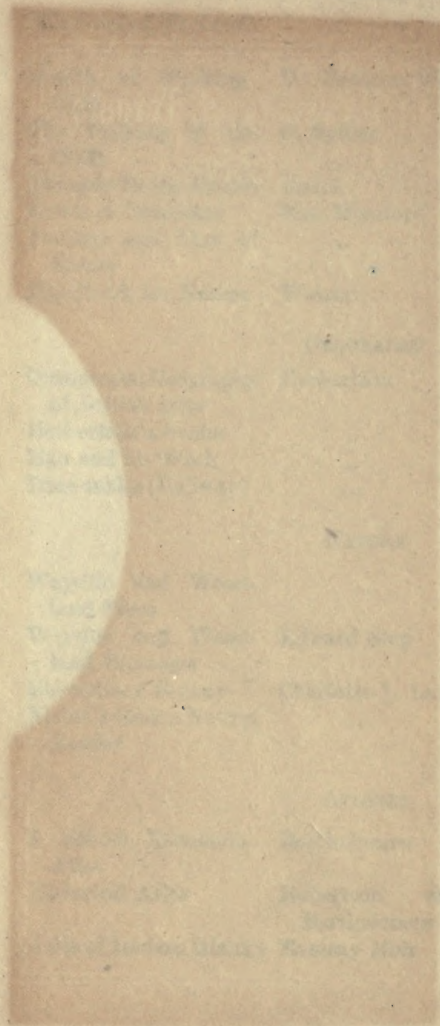
### NATURE

|                                |                     |            |
|--------------------------------|---------------------|------------|
| Wayside and Wood-land Trees    | ...                 | ...        |
| Wayside and Wood-land Blossoms | Edward Step         | Fred Warne |
| Elementary Botany              | Charlotte L. Laurie | Allman     |
| Nisbet's Senior Nature Reader  | ...                 | Nisbet     |

### ATLASES

|                         |                           |                         |
|-------------------------|---------------------------|-------------------------|
| A School Economic Atlas | Bartholomew               | Oxford University Press |
| Historical Atlas        | Robertson and Bartholomew | Oxford University Press |
| Atlas of Modern History | Ramsay Muir               | Phillips                |







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